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# CHILD DEVELOPMENT

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# CHILD DEVELOPMENT

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# CONSISTENCY AND CHANGE IN ASCENDANCE- SUBMISSION IN THE SOCIAL INTERACTION OF CHILDREN<sup>1</sup>

LELAND H. STOTT *and* RACHEL STUTSMAN BALL

*The Merrill-Palmer School*

How consistent are behavior patterns throughout childhood? What aspects of behavior are related to maturation and learning and therefore change as the child grows older? What aspects that reflect personality tendencies remain consistently part of the picture of the individual through a 10-year period of development?

An attempt to elucidate these questions of consistency and change in behavior patterns, through an analysis of data from behavior check lists (Personality Rating Scales) developed some quarter century ago at The Merrill-Palmer School, will be made in this article and others to follow.

The original purpose of these check lists (6) was to provide a means of recording the behavior of individual children in the Merrill-Palmer nursery school and recreational clubs.<sup>2</sup> Various aspects of the children's development were being reported and recorded regularly, but there was a tendency for teachers and club leaders to select unusual behavior and outstanding incidents for report, and to let the daily, regular, accepted behavior go unrecorded. Again, the behavior of some children was being reported frequently, that of others rarely or not at all. Various devices had been tried to provide better records of behavior, including the assignment of a stenographer to take daily dictation from teachers and club leaders, but the habit of selecting interesting incidents was set, and the material collected was therefore unsatisfactory for developmental records.

In constructing check lists to remedy this situation, hundreds of descriptive statements about children's behavior were collected from many sources. These statements were classified into nine major categories, and scoring values for statements in each category were established by the Thurstone (8) method. The nine schedules thus developed were reported by Roberts and Ball (6) in 1938. These check lists, filled in for each child at specific intervals, became part of the longitudinal records, and provide

<sup>1</sup> The authors wish to acknowledge with thanks the help of Merrill-Palmer staff members, Dr. Melvyn J. Baer, who drew the figures in final form, and Dorothy L. Tyler, Editor of Publications, who gave invaluable assistance in preparation of the manuscript.

<sup>2</sup> The Recreational Clubs, organized in 1929 as a service continuous with the Nursery School for children aged 5 to about 15, provided student experience with school-age children and also longitudinal records and educational and research material for the staff. Each club met weekly for a late afternoon program under staff-student supervision.

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the basic materials for the present study, based on the ascendance-submission schedule.

### ASCENDANCE-SUBMISSION IN HUMAN INTERACTION

The ascendance-submission variable in human interaction is usually treated as a unitary dimension. In any given interactional situation, at any particular moment, an individual is in varying degrees either ascendant or submissive. At another moment the roles may change, the formerly submissive one now assuming the dominant role, in the sense that attention is now upon what he is saying or doing. In a more enduring sense, however, some individuals are generally less inclined than others to assume the dominant role. Thus, it is not difficult to think of specific individuals as characteristically inclined to be less ascendant than others, and thus to occupy a particular position on a continuum from extreme ascendance to extreme submissiveness.

However, the quality of such behavior also presents important questions. In recent literature a distinction has been drawn, on the one hand, between what in the adult is characterized by Maslow (4) as a need to "seek power as a means to unconscious ends," resulting in behavior in relation to others regarded as "socially obnoxious," and characteristic of "the authoritarian personality," as described by Adorno and others (1); and, on the other, the sort of interactive behavior that develops in face-to-face relationships usually referred to as "ascendance-submission" (3).

The problem of distinguishing between different qualities of ascendant behavior in children has received considerable attention from Mummery (5), who devised a method of evaluating such behavior in terms of "social acceptability."

### QUESTIONS CONSIDERED

In the present study we are concerned with the following specific questions regarding the interactive behavior of children through a 10-year period of development: What qualitatively different kinds of behavior were involved in the social interaction of children, as described by the 30 items of the ascendance-submission (A-S) schedule? To what extent is it possible to classify individual children in terms of particular qualitative types or patterns of interactive behavior, as displayed in the nursery school and clubs situations? What changes took place in the actual amount of A-S behavior during the period studied? Did these children as a group become more ascendant as they grew older? Were there changes in the quality of their ascendant behavior?

### SUBJECTS AND MATERIALS

The records of 60 children were selected for study on the basis of the amount of relevant material filed for them. Checkings for these 60 subjects

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on 30 A-S items (Table 1) are the data analyzed in this report. Schedules were checked for many subjects over a period of 10 years or more, from age 2 or 3 to age 13+. For others, schedules were checked over varying lengths of time within the 10-year period. For six children, schedules were checked 30 times or more; for two, only 8 times; the median number per subject was 18.

Table 2 shows the number of children checked at each of the 13 age levels and the total number of check lists available for each age level.

TABLE 1  
ASCENDANCE-SUBMISSION CHECK LIST\*

- 
1. Submits to any child who takes the initiative.
  2. Even submits to younger children.
  3. Dominates children more mature than himself.
  4. Submits to a leader only after a struggle to dominate.
  5. Usually leads a small group.
  6. Decides who shall participate in the group activities.
  7. Is a leader in any group.
  8. Directs all activity about him.
  9. Neither leads nor follows; plays alone.
  10. Other children make many appeals to him for information.
  11. Dominates other children through his ability to talk effectively.
  12. Other children appeal to him to make decisions for the group.
  13. Dominates other children through their love or admiration for him.
  14. Dominates other children through his wealth of ideas.
  15. Definitely schemes to get others to carry out his plans.
  16. Gives commands with an air of finality.
  17. Helpless unless someone organizes activity for him.
  18. Hesitates to initiate activity.
  19. Hesitates to make suggestions to other children.
  20. Usually follows the idea of others for activity.
  21. Can take the initiative if it is absolutely necessary.
  22. Usually takes the initiative.
  23. Seeks the approval of the leader before he acts.
  24. Does not push the issue in case of opposition.
  25. Stands aside to let others participate.
  26. Fights for his place as leader.
  27. Opposition spurs him on to greater activity.
  28. Insists that other children do as he wishes.
  29. Does not defend his own rights with other children.
  30. Gets willing cooperation easily.
- 

\* The 48 statements of the original A-S scale (6) are here reduced to 30, with 18 statements, found to be nondiscriminative, omitted. As here presented, the A-S scale provides the first step in a projected revision of the nine original "Personality Rating Scales."

QUALITATIVE ANALYSIS OF A-S ITEMS

An examination of A-S items reveals that they describe and involve qualitatively different behavior. For example: to say that a child "insists that other children do as he wishes" would seem to refer to behavior of quite a different quality from that implied when we say, "Other children

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TABLE 2  
NUMBER OF CHILDREN AND A-S SCHEDULES STUDIED  
AT EACH AGE LEVEL

Age	Children	A-S Schedules
3 and under .....	27	139
3-1 to 3-6 .....	30	102
3-7 to 4-0 .....	33	143
4-1 to 4-6 .....	40	146
4-7 to 5-0 .....	42	157
5-1 to 6-0 .....	32	74
6-1 to 7-0 .....	25	66
7-1 to 8-0 .....	34	72
8-1 to 9-0 .....	28	56
9-1 to 10-0 .....	18	38
10-1 to 11-0 .....	15	25
11-1 to 12-0 .....	12	28
12-1 and over .....	20	51

make many appeals to him for information." Both statements have high scoring values in the original A-S scale.

Accordingly, it seemed important first of all to identify and perhaps to deal differentially with any qualitatively different variables in the schedule. A careful preliminary sorting of the 30 items led to six tentative groupings of A-S items, numbered as in the revised check list (see Table 1), as follows:

## A-S Items: Six Groupings

- I. Domination (bossiness)—ascendant behavior with definite tendencies toward use of force or coercion.
  4. Submits to a leader only after a struggle to dominate.
  8. Directs all activities about him.
  15. Definitely schemes to get others to carry out his plans.
  16. Gives commands with an air of finality.
  26. Fights for his place as a leader.
  27. Opposition spurs him on to greater activity.
  28. Insists that other children do as he wishes.
- II. Natural Leadership—ascendant over other children because of personal resourcefulness and attractiveness.
  10. Other children make many appeals to him for information.
  12. Other children appeal to him to make decisions for the group.
  13. Dominates others through their love or admiration for him.
  14. Dominates other children through his wealth of ideas.
  30. Gets willing cooperation easily.
- III. Ascendance—behavior which might relate to either authoritarian "domination" or "natural leadership" patterns.
  3. Dominates children more mature than himself.
  5. Usually leads a small group.

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6. Decides who shall participate in the group activities.
  7. Is a leader in any group.
  11. Dominates other children through his ability to talk effectively.
  22. Usually takes the initiative.
- IV. Timid Conforming Behavior—related to politeness and a need to please others.
18. Hesitates to initiate activity.
  19. Hesitates to make suggestions to other children.
  23. Seeks approval of the leader before he acts.
  24. Does not push the issue when opposed.
- V. Dependent Submissiveness—behavior related to ineffectiveness and immaturity.
1. Submits to any child who takes the initiative.
  2. Even submits to younger children.
  17. Helpless unless someone organizes activity for him.
  20. Usually follows the ideas of others for activity.
  29. Does not defend his own rights with other children.
- VI. Individualistic Tendency—withdrawal, not necessarily related to either ascendance or submissiveness.
9. Neither leads nor follows; plays alone.
  21. Can take the initiative if it is absolutely necessary.
  25. Stands aside to let others participate.

FACTORS AS BEHAVIOR PATTERNS

An important question in relation to these six groupings, arrived at on a purely judgmental basis, is whether, among our 60 subjects, there actually are "behavior types" whose interactive behavior in peer relationships can be characterized and differentiated in terms of these or other groupings of statements.

An answer to this question, using Thurstone's centroid method, was sought in the results of a factor analysis of check-list material, including the 30 A-S items of the present study. Instead of the more common procedure of analyzing a table of intercorrelations among the check-list items for the 60 subjects, intercorrelations among children were analyzed<sup>3</sup> for the first 15 subjects on the list of 60 (arranged in random order). Thus in this instance the check-list items, rather than the 15 subjects, constituted the sample. It seemed important, however, to have a more adequate sample of behavior on which to base our interindividual correlations than was provided by the 30 A-S items. Since two other schedules in the series of nine, i.e., "Independence of Adult Affection and Attention" and "Response to

<sup>3</sup> In such an analysis each rotated factor is interpreted in terms of specific children (those with high factor loadings) and the behavior patterns checked for them. Since we sought children who represented "behavior types," this Q-type analysis seemed more appropriate than the usual R-type. The inter-individual correlations were expressed as tetrachoric coefficients, computed by means of Thurstone's (9) computing diagrams. In setting up the tetrachoric tables, the requirement of Stephenson (7), that in this type of analysis the mean "scores" on each item must be equalized for all individuals, was met by using a procedure proposed by Holley and reported by Guilford (2).

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Authority," were also concerned with interactive tendencies and relationships, the items from these two were added, thus providing a sample of 109 items.

The analysis was carried through eight factors. "Simple structure" was approximated by means of orthogonal rotations, two axes at a time (2, p. 501). From the rotated factor matrix, the children with high factor loadings were singled out. The characteristic<sup>4</sup> A-S behavior pattern of each of these children was then examined, and an attempt was made to interpret each factor in terms of these patterns.

Since less than a third of the items involved in the analysis were A-S items, it is significant that three of the eight factor patterns were found to correspond fairly closely to our logically differentiated A-S behavior item groupings. The most clearly identified was item grouping I, Domination (bossiness); four of the seven items of this grouping formed the core of one factor pattern, which at the time of analysis was interpreted as "domineering in peer relations, with tendencies to 'strong arm' exploitiveness—also tried to domineer in his relationships with adults."

A second factor pattern furnished some validation of our item grouping IV, Timid Conforming Behavior. A child with a significant negative loading in this factor was described, in terms of the items that characterized him, as submitting to any child who takes the initiative, hesitating to make suggestions, following the ideas of others, and standing aside to let others participate. The positive aspect of this factor, on the other hand, describes the child who takes initiative yet does not force his will on others, but, rather, recognizes the rights of others—qualities important in democratic leadership.

Item grouping V, Dependent Submissiveness, also received support from the factor analysis. Children with high loadings in this factor were characterized by such items as helpless unless someone organized activity for him, submits to any child who takes the initiative, and even submits to younger children.

A finding not related to any of the item groupings is worth noting. Most of the items that characterized the two individuals with the highest factor loadings were distributed among the three ascendance groupings (I, II, and III). Some, however, were found in IV, Timid Conforming Behavior. In general, the factor pattern appears to represent a moderate generalized ascendant tendency, perhaps with Natural Leadership (I) as its strongest component, but also with a tendency toward respect for and consideration of others.

<sup>4</sup> Arbitrary criteria were adopted for selecting items characteristic of a child's A-S behavior on the basis of the over-all frequency of item checkings for the group as a whole, as well as the frequency for the child concerned. For a very "unpopular" item to be checked at all for a child has significance. For any description to be taken as characteristic of a child, a maximum individual frequency of 25 per cent was set arbitrarily for the most "unpopular" items; for the most popular items, 50 per cent.

The remaining factors also represent children whose patterns of frequently checked items do not correspond to any one of the six groupings, but tend to cut across several or all of them. They typify the sort of check-list pattern to be expected for young children. Few children are likely to be consistently "domineering" or "dependent" or "timid" in all situations, or to display uniformly the qualities of "natural leadership." More typically they would be inclined to show these qualities over a period of months or years, and, in varying degrees, in interaction with peers.

However, the factor analysis, involving a sample of the subjects and including, among others, the A-S items, provided some evidence that certain "behavior types" in terms of ascendance and submission may be identified among children. Certain factors represented children whose characteristic behavior corresponded fairly closely with our judgmental groupings of the A-S items, while certain other factors represented children whose behavior cut across several or all six item groupings. That is, certain children, as revealed in patterns of behavior items designated as characteristic of them, were quite variable, exhibiting leadership qualities or dominating behavior in certain situations or with certain children, then being quite submissive or retiring with other children or in other situations. Thus, they adapted their behavior to the realities of the moment. Indeed, the behavior of such children was quite consistent with the exigencies of their ever changing social environment, though not in the sense of a definite pattern of behavior always characteristic of the individual child.

#### DEVELOPMENTAL CHANGES IN A-S BEHAVIOR

Since social behavior is a matter of development, in terms of both maturation and learning from social experience, young children, even when they are together in a group, are not likely to interact in any way as frequently as older children. One expectation in the present study, therefore, was that behavior describable as either ascendant or submissive would be observed more frequently in children as they passed the 3-and-under age level.

#### *Quantitative Changes in A-S Behavior*

Table 3 shows, for each of the 13 age levels, the number of A-S sheets studied, the total number of items checked, the mean number of items per sheet checked, and the percentage of total items checked. For the 3-and-under level there were 139 sheets, with 424 checks, a mean of only 3.1 items per sheet and only 10 per cent of the possible 4,170 checks. For age levels 3-1 to 3-6 and 3-7 to 4-0, a mean number of 5 items per sheet were checked, amounting to 16 and 17 per cent of the possible checks. The percentage differences between these older levels and the 3-and-under level are significant statistically well beyond the 1 per cent level of confidence. Also showing a significant increase in the proportion of items checked,

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age levels 4-1 to 4-6 and 4-7 to 5-0 have each a mean number of 6.1 items per sheet checked, or 20 per cent of the possible checks. The difference between these age levels and the two preceding is again significant beyond the 1 per cent level.

TABLE 3

NUMBER OF A-S SHEETS, NUMBER OF CHECKED ITEMS, MEAN NUMBER OF CHECKS PER SHEET, AND PERCENTAGE OF ITEMS CHECKED  
AT EACH OF 13 AGE LEVELS

<i>Age Level</i>	A-S SHEETS	I T E M S C H E C K E D		
	<i>Total</i>	<i>Total</i>	<i>Mean/Sheet</i>	<i>Percentage</i>
3 and under .....	139	424	3.1	10
3-1 to 3-6 .....	102	499	4.9	16
3-7 to 4-0 .....	143	717	5.0	17
4-1 to 4-6 .....	146	892	6.1	20
4-7 to 5-0 .....	157	959	6.1	20
5-1 to 6-0 .....	74	364	4.9	16
6-1 to 7-0 .....	66	303	4.6	15
7-1 to 8-0 .....	72	363	5.0	17
8-1 to 9-0 .....	56	253	4.5	15
9-1 to 10-0 .....	38	243	6.4	21
10-1 to 11-0 .....	25	138	5.5	18
11-1 to 12-0 .....	28	144	5.1	17
12-1 and over .....	51	267	5.2	17

These remarkable changes in over-all amount of observed interactive behavior within a period of two years would seem to be the result of two factors, biological maturation and social learning in a highly favorable environment. An organism can function at no higher levels than those for which it is "ready" in terms of biological development. The child of 2½ years ordinarily is not ready for involved social interaction or concerned much with other children and his relationships with them. He has his own private impulses to activity and is likely to resist attempts to interfere with or influence that activity. Again, he is not likely to try to influence the activities of others. For these reasons he is not likely to be checked for A-S behavior in a rating situation. However, he is developing very rapidly in terms of both maturation and social learning. In the stimulating environment of the nursery school where play with peers is the order of the day, patterns of interaction are likely to develop in pace with his organismic readiness. Thus, a peak in average frequency of interactive behavior is soon reached. In our group this peak of A-S activity was reached during the fifth year of life and the children's final year in nursery school. They had achieved "senior" status there. They were thoroughly



familiar with the situation and well acquainted with one another. They had learned many social skills and patterns of interaction appropriate to that particular situation.

The club program was quite a different situation for the children. They came only one evening a week and found themselves with some strange clubmates and new leaders. At the same time they were adjusting to the kindergarten situation in the public school. It is not surprising, therefore, that many of their records show a definite decrease in social interaction. Table 3 shows that the average number of checked items per sheet dropped from the peak of 6.1 to 4.9. The corresponding percentage difference is significant at the 1 per cent level. Interestingly, the frequency level of checking remained approximately the same for four years, after which time another peak of A-S behavior occurred. At age level 9-1 to 10-0 the mean number of items checked was 6.4 and the percentage was 21. These values are slightly higher than those for any other level and represent a significant change from the earlier levels. Following this peak, the A-S level declined, but without statistically significant changes. Figure 1 illustrates these variations in observed A-S activity level throughout the 10-year period.

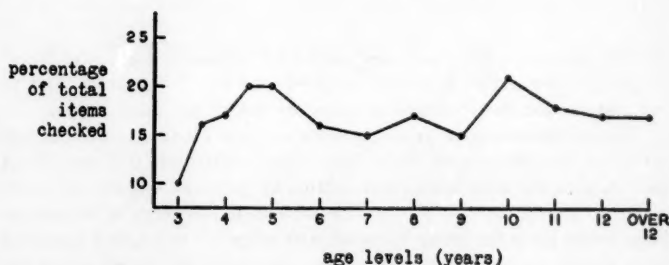


FIGURE 1—Change in amount of A-S behavior in 60 children through a 10-year period, as recorded by nursery school teachers and club leaders.

#### *Changes in Ascendance Level with Age*

Was there a tendency for children to become more or less ascendant as they grew older? To answer this question, the 30 scale items were listed in order of scale value of ascendance, from highest to lowest, and divided into three sections of 10 items each; the first section, *a*, contained the items with highest scale value, *b* those in the middle range of scale value, and *c* those describing definitely submissive behavior.

Table 4 shows developmental trends in ascendance in terms of percentages of checks in the three sections for 13 age levels. As expected, at the 3-and-under level children showed a low level of interaction, and thus

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TABLE 4

DEVELOPMENTAL TRENDS IN ASCENDANCE:  
*Percentage and Significance of Difference of High, Middle, and Low  
 Ascendancy Items Checked for Each Age Level*

<i>Age Level</i>	% POSSIBLE ITEMS CHECKED			DIFFERENCE	
	<i>a</i>	<i>b</i>	<i>c</i>	<i>a-c</i>	<i>p</i>
3 and under .....	4	15	11	-7.0	.01
3-1 to 3-6 .....	14	20	15	-1.0	ns
3-7 to 4-0 .....	14	19	18	-4.0	.01
4-1 to 4-6 .....	24	22	16	8.0	.01
4-7 to 5-0 .....	26	23	12	14.0	.01
5-1 to 6-0 .....	13	23	13	-0.2	ns
6-1 to 7-0 .....	16	20	10	6.0	.01
7-1 to 8-0 .....	14	21	15	-1.0	ns
8-1 to 9-0 .....	11	18	17	-6.0	.01
9-1 to 10-0 .....	21	26	17	4.0	ns
10-1 to 11-0 .....	12	24	19	-7.0	.03
11-1 to 12-0 .....	14	21	16	-2.0	ns
12-1 and over .....	17	26	9	8.0	.01

of A-S behavior, with 4 per cent checks for section *a*, high ascendancy; 15 per cent for section *b*, middle range—lowest for all age levels; and 11 per cent for section *c*, submissive behavior—among the three lowest.

The picture changed strikingly within a few months' time. For age 3-1 to 3-6 the percentages of checked *a* and *c* statements had risen to 14 and 15, with the ascendancy curve continuing generally upward to a peak of 26 per cent at age 4-7 to 5-0. The percentage frequency of submissive behavior for the entire group increased to 18 at age 3-7 to 4-0, then decreased to 12 during the next six months. Thus, during the age period 4-7 to 5-0, which included the child's last term in nursery school, ascendant behavior reached its peak, a picture quite in contrast to their behavior up to age 3.

Between ages 5 and 6, when the children were out of nursery school and in public kindergarten, a second notable change took place. The percentage of checks for sections *b* and *c* remained about the same as for the previous age level, but for section *a* fell from a peak of 26 to 13 per cent. Thus, the A-S aspect of the children's behavior during age 5-1 to 6-0 was very similar to that during age 3-7 to 4-0, with some striking changes taking place in the ages between. From ages 6 to 12 and above, the changes were relatively small. However, a second peak in the A-S curve (Fig. 1) resulted mainly from a relative rise in ascendancy at age 9 to 10. The same age changes, expressed as percentages of total checks at each age level for items in sections *a* (H), *b* (M), and *c* (L), are shown in Figure 2.

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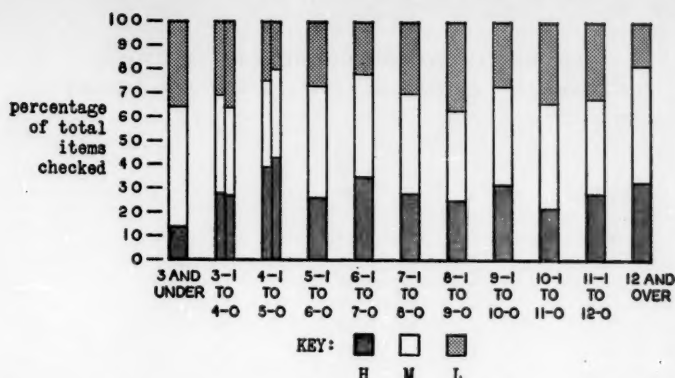


FIGURE 2—Percentages of total checks of items with high (H), medium (M), and low (L) ascendance score values for 13 age levels.

*Developmental Changes in Quality of A-S Behavior*

As we have shown, behavior patterns approximately equal in degree of ascendance or submission may be quite different in quality. To show these qualitative changes as the children developed, the total percentage frequency of checks for the six qualitative groupings of A-S items was computed for each age level (Table 5).

Findings from other tabulations also appear here. For example, at the 3-and-under level the relative frequencies with which any sort of A-S behavior was observed tended to be low, especially for the categories (I, II, III) describing ascendant behavior. For category VI, individualistic (isolate) behavior, the percentage of 37 for the 3-and-under level was high. As we have seen, at this early age children are inclined neither to lead nor to follow, but to play alone. Up to age three, children seem to have their own individual ideas for activity and are not likely to seek adult approval before going ahead, or to attempt to direct activity or decide who shall participate in it; they are inclined, rather, to stand aside and let others participate in an activity. In general, category VI is most descriptive of children of 3 and under.

Particularly during the three-year period of nursery school attendance, there was a fairly consistent increase in ascendant behavior and a decrease in isolate tendency. Domination (I), for example, increased in percentage frequency from 6 at 3-and-under to 23 at the 4-7 to 5-0 level; for natural leadership (II), the corresponding increase was from 4 to 26 per cent. During the same period the decrease in percentage of individualistic tendency (VI) was from 37 at 3-and-under to 19 at 4-7 to 5-0. Changes in the other three categories (III, IV, and V) were irregular and usually not

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TABLE 5

DEVELOPMENTAL CHANGES IN QUALITY OF A-S BEHAVIOR:  
*Percentage of Items Checked in Six A-S Categories and Combined Categories*

<i>Age Level</i>	% POSSIBLE ITEMS CHECKED						<i>Combined Categories</i>
	I	II	III	IV	V	VI	
3 and under	6	4	8	12	9	37	10
3-1 to 3-6	16	15	35	19	10	31	16
3-7 to 4-0	15	15	17	21	14	34	17
4-1 to 4-6	24	22	25	16	14	23	20
4-7 to 5-0	23	26	30	15	9	19	20
5-1 to 6-0	16	16	22	17	8	24	16
6-1 to 7-0	18	18	22	14	5	18	15
7-1 to 8-0	17	15	19	19	11	19	17
8-1 to 9-0	17	11	21	16	16	20	15
9-1 to 10-0	17	23	28	26	12	15	21
10-1 to 11-0	17	12	20	23	14	25	18
11-1 to 12-0	18	21	17	19	14	19	17
12-1 and over	23	21	23	13	6	19	17

\* Category: I (7 items), domination; II (5 items), natural leadership; III (6 items), ascendance; IV (4 items), timid, conforming; V (5 items), dependent submissiveness; VI (3 items), individualistic. Combined categories, 30 items.

significant. From age 5 to 12 and over, there was again a slight and somewhat inconsistent trend in the direction of greater ascendance (I and II).

To summarize: As a group, our subjects during nursery school attendance became progressively more ascendant and progressively less isolate, but showed no consistent trend of change in frequency of submissive behavior. With the situational change from nursery school to kindergarten and clubs, ascendant behavior was noted less frequently. Though the remainder of the period of study there were no consistent changes in A-S frequency.

## SUMMARY AND FINDINGS

This report, the second<sup>5</sup> in a projected series, is concerned with ratings of 60 children on the 30 items of an ascendance-submission (A-S) schedule during varying periods of time over a 10-year interval, while they were attending the Merrill-Palmer Nursery School and Recreation Clubs.

<sup>5</sup> The first in the series was a paper by Jayaswal and Stott (3). "Ascendance-Submission in the Preschool Child and His Adult Personality," by Sita Ram Jayaswal, a doctor's dissertation (University of Michigan—The Merrill-Palmer School, 1954), also deals with the general subject. The thesis was published in India as *Early Childhood and Adult Personality* (Benares: Nand Kishore & Bros., 1954).

The purposes were: (1) To identify in the 30 items qualitatively different forms or patterns of ascendant or submissive behavior; (2) to determine whether and to what extent the subjects presented individual patterns corresponding to these or other generalized A-S patterns; (3) to note and describe any general age changes and developmental trends in the amount of social interaction related to A-S; (4) to determine specifically whether there was an increase in the tendency to be ascendant with age; and (5) to describe developmental changes in the quality of ascendant behavior in our subjects through the 10-year period.

The 30 A-S items, judged to be descriptive of a number of different qualities of interactive behavior, were arbitrarily classified into six qualitative groupings, as follows: I, Domination (bossiness); II, Natural Leadership; III, Ascendance (behavior which might relate to either domination or natural leadership); IV, Timid, Conforming Behavior; V, Dependent Submissiveness; and VI, Individualistic (isolate) Tendency.

A Q-type factor study was made of 109 check-list items, including the 30 A-S items. This analysis demonstrated that certain of our subjects presented individual patterns of behavior corresponding roughly to certain of our six groupings. Perhaps more significant was the great diversity of individual patterns, some of which tended to be consistent over several years. Thus, a child might show a consistent pattern of domineering or submissive behavior, or of being a natural leader, or even of combined ascendance and submissiveness. Others exhibited no characteristic patterns, but, rather, at different times and in different situations displayed virtually all types of behavior represented in the 30 items, perhaps adapting their behavior to the realities and needs of each situation.

The findings were as follows:

1. Interactive behavior generally, including A-S behavior, was significantly less frequent at the youngest level (3-and-under) than at any other, apparently because of organismic lack of readiness for social interaction, as well as lack of social experience. The percentage frequency of checking doubled (from 10 to 20) during the period of nursery school attendance (up to 5 years of age). At age 5, with the change from nursery school to kindergarten and clubs, the frequency dropped to 16. From this point on to 12+ there was no significant change, except at age 9 to 10, when the frequency was 21.

2. The increase in interactive behavior with peers was largely a change in degree of ascendance. At the youngest level (3-and-under) only 4 per cent of items with the highest ascendance values were checked; from 4-7 to 5-0 the frequency had risen to 26 per cent. Changes in frequency of submissive behavior were generally not significant.

3. No significant change occurred in the relative amounts of three qualities of ascendant behavior described as domineering bossiness, natural leadership, and undifferentiated ascendance. However, a significant devel-

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opmental trend (increase) occurred in each, particularly during the nursery school period. At the same time, there was a marked decrease in percentage of individualistic (isolate) behavior (37 to 19).

The authors conclude that readiness of the organism is the first requisite to social interaction in children, but even when thus ready they still must learn to be socially responsive and interactive. The amount as well as the quality of social behavior they develop, whether in terms of positive leadership, domineering exploitiveness, dependent submissiveness, or conformity and compliance with the wishes of others, would seem to depend largely upon environment. In a nursery school situation, with abundant opportunity for social experience, patterns and varieties of interactive behavior develop rapidly.

The factors that dispose a child to develop in a particular direction in relation to ascendancy or submissiveness await discovery in further research.

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## NUTRITION DURING GROWTH AND DEVELOPMENT<sup>1</sup>

PENELOPE S. PECKOS<sup>2,3</sup>

*Forsyth Dental Infirmary for Children*

The study of the growth and development of children is a very complex subject involving knowledge in many disciplines, such as anatomy, physiology, genetics, biochemistry, nutrition, dental medicine, and psychology. Nutrition is one of these disciplines which requires a great deal of attention.

During approximately the first 16 years of life, the child normally achieves full physical stature and develops into an adult. It is during this period that the nutritional needs of the child are constantly changing.

In any discussion of nutrition during growth and development, consideration must be given to the prenatal diet and to its effect on the mother and child. It is now well established that developmental studies of the prenatal period are important and may reveal the answers to many questions concerning the effect of nutrition on the developing tissues of the fetus and on the ultimate soundness and resistance of these tissues to disease.

The nutritional needs of infancy, childhood, and adolescence are no less important. These needs parallel periods of accelerated growth and periods of decelerated growth. During infancy and the early preschool years a child grows rapidly, making his nutritional requirements very high; during the later preschool and school years the rate of growth slackens, and his nutritional needs at this time level off. Then, before puberty certain phases of growth again become accelerated, and the nutritional

<sup>1</sup> Presented at the Annual Meeting of the Public Dental Officers' Group, London and Home Counties Division of the British Dental Association, October, 1954, London, England.

<sup>2</sup> Chief of the Nutrition Department, Forsyth Dental Infirmary for Children, Boston, Massachusetts.

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needs during this period increase tremendously before they taper off to the adult level. With improper amounts or unbalanced combinations of nutrients during this period of 16 years, there may be disturbances in many parts of the body. Although the incidence of obvious nutritional deficiencies, such as scurvy, rickets, and beri-beri in children has been markedly reduced, many subclinical manifestations of possible nutritional inadequacies, such as extreme fatigue, circles under the eyes and scaliness of the skin of the arms and legs, lesions at the corners of the mouth and crusted eyelids, and other symptoms of poor health are found throughout the child populations.

It is essential to realize that growth and development is a highly individualized process, and that each child will grow in his own unique way, influenced by genetic factors and by environmental factors, such as activity, rest, psychological challenge, opportunity to learn, and security in affection. It is impossible to understand the child physically without understanding him at the same time as a child who thinks and feels. All of this means that the child reacts as a total being, and it is important to have a clear understanding of this fact if the child is to be educated and guided properly.

Within recent years, the tendency to become highly specialized in any given field of science has lessened the importance, to the specialist, of the total individual. It is necessary to remember that no one discipline can perform its function or discharge its responsibility to the individual by divorcing itself from a consideration of the over-all health of that individual. In children this approach assumes tremendous importance during their growth and development, which is a critical period indeed.

## PREGNANCY

### *Prenatal Diet*

Although in the earliest part of pregnancy the ovum carries some nutrient material within itself, the unborn child is dependent upon the mother for the major portion of the material needed for its growth and development. Before discussing the prenatal diet of the mother, we must consider her nutritional status before pregnancy. If the mother was poorly nourished prior to pregnancy, then a good diet begun during the pregnancy might have to be utilized by the mother to build up her depleted stores of essential nutrients. This may lessen the availability of these nutrients to the fetus, and might possibly exert a harmful influence on the ultimate health of the infant.

The interrelationship of mother and fetus and the extent of dependence of the fetus upon the maternal diet require more extensive investigation before the role of nutrition in pregnancy can be fully understood. Such studies are being conducted by Stuart and Burke at the Harvard School of Public Health. Mention should be made of some of the results of their investigations.



One study involved 216 maternity patients at the Boston Lying-In Hospital, who were watched closely and examined periodically from the fourth or fifth month of pregnancy to term. Stuart and Burke found that women who had optimum dietaries prior to and during pregnancy, according to the standards established by the United States Food and Nutrition Board of the National Research Council (11), delivered the healthiest babies, and that women who had only fair or very poor dietaries had a higher incidence of premature births, stillbirths, and babies with congenital abnormalities (3). A statistically significant relationship was found to exist between the prenatal dietary rating and the condition of the infant. These results have been substantiated by Cameron and Graham (4) in studies done at the Glasgow Royal Maternity Hospital and Women's Hospital and by the Toveruds (6) in Oslo, Norway.

The relationship between nutrition and congenital malformations has received attention by many investigators. Accumulated evidence indicates that the fetus can no longer be considered a true parasite living at the expense of the mother and that faulty nutrition may affect not only the pregnant woman, but also her fetus, in ways that are not usually considered to be the results of malnutrition (8). Although the studies by Stuart, Burke, and others indicate that most of the infants with congenital malformations were born to women who had had the poorest diets, the number of cases observed was too small to permit final conclusions to be drawn. However, Warkany and others have demonstrated beyond reasonable doubt that certain congenital malformations in animals do result from maternal dietary deficiencies (7). If these findings are even partly applicable to human beings, then it might be futile to correct the maternal diet after the first trimester of pregnancy in an attempt to prevent congenital anomalies.

#### *Dietary Requirements During Pregnancy*

The quantity of food need not be increased during the first trimester of pregnancy, except for women who are underweight. During the second and third trimesters of pregnancy, however, the quantities of certain nutrients required by the pregnant woman are increased considerably.

1. The protein intake must be increased because it is specifically needed for growth, and because, as a rule, a diet low in protein is also lacking in other important factors. Under ordinary circumstances a desirable daily allowance of protein is considered to be 1 gm. per kg. of body weight in an adult, but nutritional authorities agree that an increase to 1.5 gm. per kg. of body weight is more desirable to supply the demands made by the growing fetus and by maternal tissue repair in the latter half of pregnancy.

2. The calcium and phosphorus requirements are increased in order to meet the needs of the mother and those of the bony framework of the body of the fetus, as well as for the proper formation of tooth structure. The recommended normal allowance for calcium is 0.8 gm. per day, which

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is increased to 1.5 gm. during pregnancy. There are no data for the recommended intake of phosphorus, but it is generally agreed that if the amount of calcium in the diet is adequate, the phosphorus intake will be adequate also.

3. The proper utilization of calcium and phosphorus depends upon the inclusion of a certain amount of Vitamin D; the necessary amount is thought to be 400 International Units daily.

4. An adequate supply of iron is no less important than that of calcium, since the fetus stores iron for its own use during the first months of infancy. The normal daily requirement of iron is 12 mg.; for pregnancy it is raised to 15 mg. daily.

5. Iodine is also an important element in the diet, because a deficiency may cause goiter in the child or in the mother. The requirement for iodine is very small, probably 0.15 mg. to 0.30 mg. daily for the adult. The need is met by the regular use of iodized salt. This is especially important during pregnancy.

6. Undoubtedly there is an increased need for vitamins during pregnancy. Vitamin A is increased from 5000 I.U. per day to 6000 I.U. Since the B complex vitamins—thiamine, riboflavin, niacin, folic acid, pantothenic acid, pyridoxine, and others recently discovered—are all concerned with metabolic processes, and since metabolism is increased during pregnancy, it is essential that there should be a corresponding increase in the intake of this group of vitamins. The ascorbic acid requirement is greater during the latter part of pregnancy, and the intake is increased from 70 mg. to 100 mg. per day (11).

In spite of the increased intake of important nutrients by the pregnant woman, a corresponding increase in her weight is not necessarily indicated. It is to be expected that most pregnant women will have an average weight gain of about 20 pounds (9 kg.). Most obstetricians prefer to limit the weight gain of their patients to less than 20 pounds if the patients are in good health.

### *Disturbances Associated with Pregnancy*

During pregnancy, there may be nausea and vomiting. The causes of nausea and vomiting have not been established definitely, but studies have shown that they are more likely to occur in women whose diets are inadequate (2).

During the third trimester, the so-called toxemia of pregnancy may occur. The exact causes of this toxemia are still undetermined, but it is felt by some authorities that a true toxemia of pregnancy may be less common when the diet has been adequate throughout the pregnancy. Burke reported that women whose diet was rated as good or excellent did not suffer from toxemia (3). Nausea and toxemia are important factors to consider because they are known to have some effect on the fetus. If attention is given by the pregnant mother to all the nutritional factors discussed,

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there is no reason why her infant cannot be in optimum health at the time of delivery, barring genetic or medical factors beyond the control of the parents.

In the foregoing discussion emphasis has been placed on one aspect of prenatal nutrition and growth and development. The relationship of nutrition and dental health should also be considered.

Assuming that the teeth and their adjoining tissues are influenced by diet, the quality of the prenatal diet could be a factor which influences the structure of the deciduous and permanent teeth, and this, in turn, could play an important role in the maintenance of dental health once the teeth are exposed to the oral environment (12). Thus, the qualitative development of the dental enamel must be of tremendous significance to dental health. This can only mean that the period of its primary development must be a crucial one. Since the period of its primary development is in utero, and since the material for its development must come from the mother's diet, should we not consider that prevention of dental caries begins with pregnancy? Until now, most of the attempts to control dental caries have been made after the breakdown of the teeth has occurred. Efforts should be made, instead, to promote good dietary practices which may help to ensure the formation of more resistant teeth (12). Prenatal advice concerning the diet alone is not sufficient, since such advice is based usually on the assumption that the mother is in good nutritional status at the beginning of pregnancy, and it is known from dietary surveys of samples of populations that this is seldom so.

A new approach to the problem of tooth decay is the study of the trace elements found in food and teeth. These studies on the effect of trace elements on the integrity of the teeth have received wide attention. Especially impressive is the reported influence of fluorides on dental health. It is quite possible, therefore, that the impact of this recent research on fluorides is only the beginning, the first clue to what may be other significant relationships between trace elements and dental health.

## INFANCY AND CHILDHOOD

### *Breast Feeding versus Artificial Feeding*

The mainstay of the infant's diet for the first three months of life is milk in some form or other. There has been considerable discussion of the merits of breast feeding versus artificial feeding. It is true that breast milk is a product of the mother's diet and may, therefore, not be the ideal food in all instances. It is true, also, that breast milk may lack adequate amounts of various vitamins, making supplementation desirable. Yet human milk is the food designed by nature for the human infant, and no one has yet succeeded in producing a formula for infant feeding which can be demonstrated to be an improvement on nature's product (10).

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The exigencies of modern living may require that a mother work outside the home, making artificial feeding a necessity. Also some mothers may object to the nursing of their babies because of emotional factors or misconceptions about breast feeding. The time required for proper instruction of mothers and the ease of control offered by the technically well-developed artificial procedures, which apparently obtain good nutritional results in most instances, have made physicians and nurses feel justified in advocating formula feeding in preference to breast feeding (10). It is generally agreed, however, that if they were properly educated, many more mothers could breast feed their infants successfully.

### *Nutritional Requirements during Infancy and Childhood*

Because of the rapidity of the infant's growth during his first year of life, the nutrients required for this period are greater, in proportion to body weight, than at other times of his life. The protein requirement is 2 to 3 gm. per kg. of body weight and is supplied by the milk intake. The calcium and phosphorus requirement is also supplied by the milk intake. The energy requirement, 120 cal. per kg. of body weight per 24 hours, is met by the addition of some sugar product to the formula (11). The ascorbic acid requirement is met by giving the infant orange juice when not breast fed, and the vitamin A and D requirements are met by the administration of some fish liver oil concentrate daily.

There is some difference of opinion among pediatricians as to when supplementary foods should be given. It is generally agreed that solid foods should be started as soon as the infant is able to tolerate them, depending, of course, on the degree of maturity of the gastro-intestinal tract of the child, which varies considerably among infants. Most infants are able to tolerate solid foods by the time they are between three and six months old. By the end of the first year the baby should be eating a variety of foods. From the second to the fourth or fifth year, there should be a gradual introduction of most foods on the well-planned family table.

### *Food Habits*

The requirements of the growing child are very specific; therefore, children are in need of constant guidance and supervision. A great deal of time and effort is required to establish good food habits in children, but the task can be made a little easier if a few fundamental concepts are observed and a little common sense is used. First, the meal hour should be one of peace and quiet. Tension and unpleasantness during the meal will often destroy the child's appetite and the appetites of the parents. Second, the child whose appetite is small will best be served by having one dish at a time placed before him. Children often prefer to take one food at a time rather than to mix them. Third, children are great imitators; they often partake of certain foods simply because their parents do. Therefore, if the dietaries of the parents are good, the dietary of the child will be good. A child who is scolded and made to feel that he is being coerced into eating

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certain foods is sure not to want them. Finally, if a child is to be offered some unfamiliar food, it should come early in the meal, while he is still hungry, and it should be given in small quantities. If he rejects it, he should not be forced to eat it, but it should be offered to him again a week later. Bribery is always a poor psychological practice, since the child soon learns how to make a mother thoroughly unhappy by expecting bribes for foods that he once ate with relish. The most effective plan is to expect the child to eat the food set before him and for the parents to have good food habits themselves.

At different ages appetite varies a great deal from meal to meal, but this variability tends to diminish with increasing age. Usually, children have a unique way of compensating for their losses and of making them up at another meal. A child's food habits reflect his nutritional needs, the degree of maturity of his body, his personal satisfactions and dissatisfactions, and the impact of the economic and social world upon him (9).

*Growth Curves*

Weight gain should be fairly consistent, but the rate of gain will vary, depending on the genetic structure of the child, the sex (boys are a little

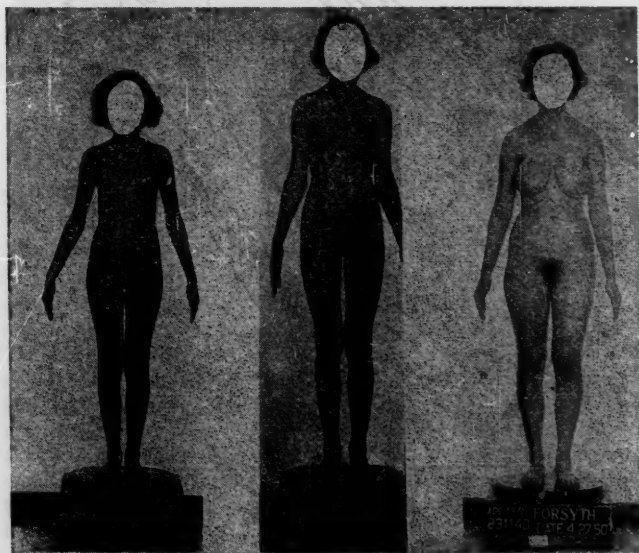
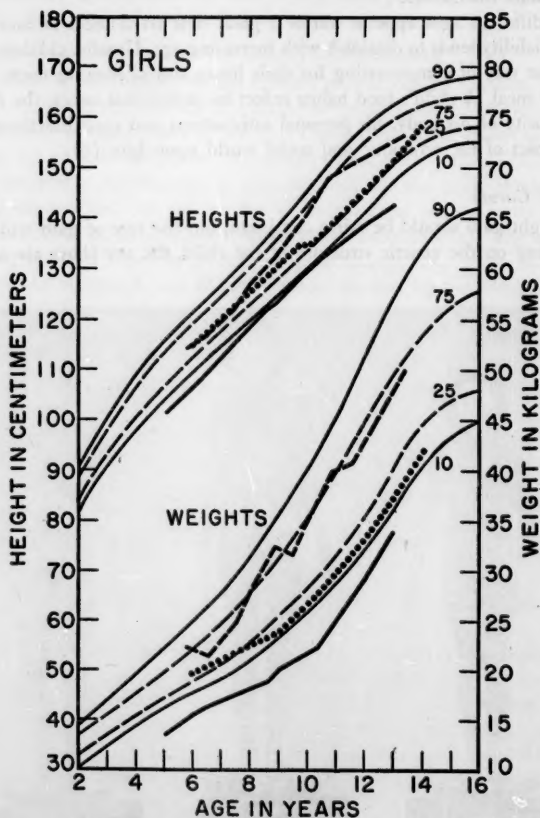


FIGURE 1—Somatotype photographs showing the wide range of variation in growth and development of three girls of the same age.

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heavier than girls), and the type of body build of the child. Although tables of average weight and height have long been used to evaluate the child's rate of growth, it is far better to make this evaluation in terms of his own growth pattern, since children of the same age vary considerably in their rate of development (*see* Figs. 1-4). As long as a child eats adequately and maintains a steady gain in weight and height, there need be no concern over comparisons with children of different stock and build.



Designed by Harold C. Stuart, M.D.

FIGURE 2—The height and weight records of the three girls shown in Figure 1.  
 ——— most retarded      ..... slightly retarded      - - - most advanced

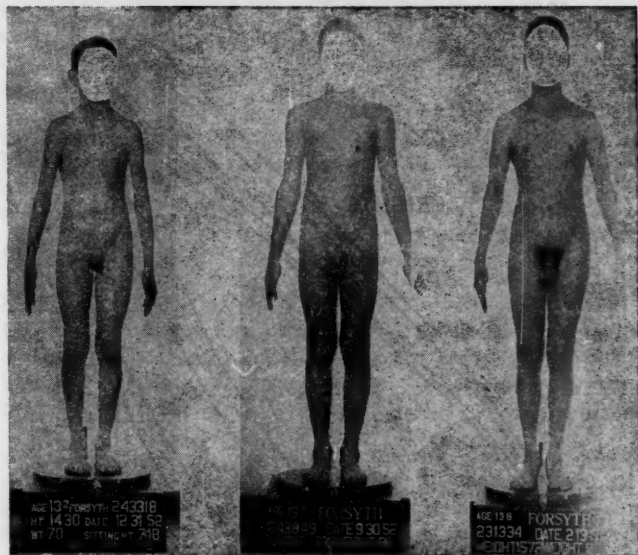


FIGURE 3—Somatotype photographs showing the wide range of variation in the growth and development of three boys of the same age.

#### ADOLESCENCE

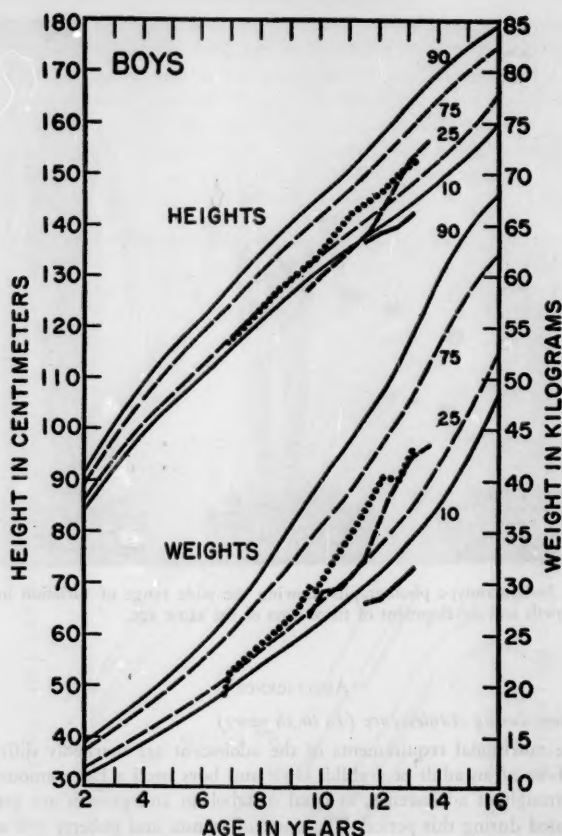
##### *Nutrition during Adolescence (10 to 16 years)*

The nutritional requirements of the adolescent are markedly different from those of an adult or a child. Girls and boys need a large amount of food throughout adolescence, as basal metabolism and growth are greatly accelerated during this period. The onset of menses and puberty will exert a tremendous influence, psychologically and physically, on the adolescent. The food requirements of these adolescents are extremely high. Calories may increase from 2500 to 3800 per day; protein increases from 70 to 85 gm. per day; calcium increases from 1 to almost 2 gm. per day; iron increases to 15 mg.; and all the vitamins are correspondingly increased (11). Parents who do not understand this increased need for food become unduly worried and restrict the food intake of their children, thereby forcing them to get their required calories from non-protective foods at the local emporium.

The parents of the adolescent are not only upset by the nutrition habits of their offspring, but are beset by many other problems at the same time, such as lowered school grades, assertion of independence, disobedience, and



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Designed by Harold C. Stuart, M.D.

FIGURE 4—The height and weight records of the three boys shown in Figure 3.  
 ————— most retarded    ..... slightly retarded    - - - - - most advanced

resistance to criticism and advice. If these transitory problems are handled inadequately and unwisely by the parents, the personalities and outlook of these young people are often badly damaged.

Adolescence is both a biological process and a period of social transition. The juvenile organism undergoes a process of physical growth and maturation as it moves toward adulthood. At the same time, the individual must pass through a transition from the status and conduct of a child to the



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responsibilities of an adult. The suitable adjustment of these processes, each to the other, and the appropriate direction and timing of the demands made by adults upon the developing adolescent are important factors in the ease of growing up in our culture.

With a better understanding of the organic growth and maturation of boys and girls during the second decade of life, and with more insight into their personality development and social adjustment, we may hope to control some of the sources of pressure and strain in the lives of many adolescents (1).

*Dental Health in Adolescence*

During this crucial period between childhood and adulthood, the adolescent finds himself confronted with many problems concerning his health. Up to now he has not been interested in his health needs, but with the advent of the many physical and emotional changes that are taking place, he is at once curious, apprehensive, and fearful, and if he is not guided properly, and if his fears are not alleviated by careful explanation and counsel, he becomes a source of major concern to his parents and to those who are working with him. He does not want to be reminded of his shortcomings, such as acne, poor teeth, poor musculature, lowered school grades, and non-acceptance by his friends, and yet it is during this period that these problems are likely to require more attention than at any other time. Of particular concern is the tendency to increase in dental caries activity during this period (*see Fig. 5*).



FIGURE 5—Thirteen-year-old white boy with extensive dental caries.

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It is apparent that new carious lesions do not develop at a constant rate throughout the human life span, nor necessarily in direct progressive relationship to the length of time that the teeth have been exposed to the oral environment. The increase in number of carious lesions is high during the years of childhood, increasing to a maximum during adolescence, then decreasing to a relatively constant, low rate in early adult life, and so continuing through the rest of life (12).

Likewise, nutritional and metabolic requirements are not constant throughout life. These requirements are very high during the first months of rapid growth in infancy, increasing to a maximum during adolescence and maturation, then decreasing in adult life to a lower level which is relatively constant through the adult life of any individual, except at times of increased demand, such as reproduction and disease.

Since the trends of dental caries incidence and of nutritional requirements parallel each other to some extent throughout life, and since there is evidence that the enamel is not an entirely static structure, is it not possible that the initiation, progress, and control of carious lesions may have a definite relation to, and may at least be partially determined by, the metabolic and nutritional status of the body (12)?

If we accept this proposition, then it becomes our responsibility to give dietary advice that will provide for the protection of all body tissues at all times, including dental tissues. Adolescent children are prone to poor dietary habits, whatever the reasons, and much of the nutrition and dental literature is directed to the high intake of refined carbohydrates and the consequences on the teeth of these children. One very pertinent consideration seems to have been overlooked: that it is not what the child eats that may make the difference, but what the child does *not* eat. If the child eats the quantities of food required to furnish the allowances of essential nutrients, he will have no place for refined carbohydrates. It is impossible for most children to eat both. If they do, they will be greatly overweight in most instances. Parents should follow a consistent well-planned pattern of daily diet. One can no more eat successfully by chance, whim, or fancy, today at any rate, than one can accomplish successfully any other goal without following basic rules.

Our newer knowledge can be used to improve the health and growth of children. It is evident from observations, measurements, and various tests that some children more nearly achieve a state of health and growth in accordance with potentialities than do others. The increase in the standards for height and weight in the last few decades and the improvement of growth after enriching the diet are indications of progress. It is not enough to prevent a child from having rickets, scurvy, or any other disease. It is important that his body be ready to do what the will commands and do it without undue conscious effort. There are too many children today who live in that "twilight zone" between the absence of actual disease and the level of buoyant health which liberates the body and makes

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enjoyment of life possible, who are victims of a "hidden hunger" almost as devastating as "stomach hunger." Example after example of "precritical" malnutrition can be found in the literature and seen in the clinic. Such subclinical handicaps "cripple confidence, initiative and efficiency, impair daily achievement and satisfaction, shatter ambition and cast a gray veil of uneasiness over what should be the very joy of life" (5).

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# DEPENDENCY AND AUTONOMOUS ACHIEVEMENT STRIVING RELATED TO ORALITY AND ANALITY IN EARLY CHILDHOOD

EMANUEL K. BELLER<sup>1,2</sup>

*Child Development Center, New York City*

Several studies have investigated dependency and independence in early childhood. Most of the investigators have offered very similar definitions of dependency. The main difference between definitions in various studies lies in their degree of specificity on both conceptual and empirical levels. Only recently have attempts been made to formulate more precisely certain aspects of this phenomenon and to test these formulations with technically rigorous methods (2, 4, 6). Unfortunately there has been much less consistency among investigators in the definition of independence. Characteristics subsumed under this concept range from non-distractibility and social assertiveness (6) to autonomous achievement striving (2) and emotional maturity (12).

One source of confusion in earlier studies derived from the formulation of dependency and of independence as a bipolar continuum (3, 11, 12). Such an assumption was questioned by the present author in a previous study (2). It was shown that conditions of learning might favor simultaneous increase of both dependency and independence in many children. The two concepts were then defined separately and the relationship between them was tested. The findings indicated a moderately inverse but not a bipolar relationship. Since then another investigator (6) has offered added evidence against the bipolar assumption of dependency and independence.

As a next step in the study, we are turning to an investigation of variables which might relate systematically to dependency and independence. Here, psychoanalysis has paved the way for the choice of relevant variables. It has stressed the importance of experiences in infancy for the formation of dependency. The state of dependency is most prominent in early infancy. Experiences of satisfaction and frustration in interactions with the parent, the dependency object, first center around oral activities or

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feeding and later around anal activities or toilet training. Strong dependency strivings in later life have been clinically linked to fixations of oral activities and attitudes in early childhood. Such fixations were presumably caused by experiences of oral frustration and conflict in infancy. Abraham (1) was among the first to postulate such relationships and to present much clinical evidence in support of his assumptions. Since then, there have been many references in psychoanalytic literature to the relationship of orality and dependency. A few clinical writers have dealt explicitly with this topic in an attempt to elaborate Abraham's original formulations (7, 12).

Several research studies have made direct contributions in this area. One group of studies investigated the relationship of early oral experiences to one oral fixation, namely, thumbsucking in childhood. Levy (8), Roberts (10) and Yarrow (17) reported a higher incidence of oral fixation as a result of oral frustration in infancy. Sears and Wise (14) found that children who experienced greater oral indulgence in the form of late weaning, and therefore presumably acquired a greater oral drive strength, gave more evidence of oral frustration (reactions) and a higher incidence of oral fixation. Several other studies investigated the relationship of early oral experiences to dependency. Levy (9) demonstrated how overprotective mothers who overindulged oral and other needs of their infants produced increased dependency strivings in their children. Sears *et al.* (13) investigated specifically the relationship of early oral frustration experiences and dependency, and reported findings of a positive association of infant feeding frustration and dependency in preschool children. These studies tend to confirm the importance of early oral experiences for the development of oral fixations and of dependency. They also indicate that experiences of change in oral drive in the form of both frustration and overindulgence seem to affect the above learning processes without yielding concrete evidence for differential effects of these two conditions of reinforcement. Whiting and Child (15) attacked the problem directly by distinguishing between negative and positive fixation of orality and of dependency and by postulating different learning conditions for these two types of fixation. They tested their formulations on cross-cultural data and found more supportive evidence for negative fixation, namely, for association of oral socialization anxiety with oral fixations, and of dependency socialization anxiety with heightened dependency. None of these studies investigated the relationship between oral fixations and dependency. It is of interest to note that psychoanalysts have presented as much clinical evidence for this association as for parental behaviors as determinants of oral fixations and of dependency strivings.

The relationship between anality and dependency has been less clear and has received less attention both in psychoanalytic and in research literature. Abraham (1) maintains that the child accepts demands for toilet training in order to secure approval and love from his parents. In

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another place (1) he links resistance to toilet training to passive dependent attitudes toward the analyst. Another writer, referring to the period in infancy before anal control is instituted, states: "At this period the anal activities cannot fail to be associated with tender maternal care. These activities can therefore acquire the meaning of attracting or soliciting maternal love" (7). However, in psychoanalytic literature for the most part, childhood experiences of conflict and frustration in anal activities are linked to other personality characteristics in later life more clearly than to dependency.

In the research literature we find a recent report by Sears *et al.* (13) who tested the relationship between severity of toilet training and dependency in early childhood. These investigators found no consistent association of these two variables. This study did not include data on anal fixations in the children and how these relate to dependency.

This brief review of relevant literature will not be extended to oral and anal activities in relation to independence because, as was pointed out earlier, there has been very little uniformity in definition and use of this concept.

A last point of interest is the role of psychopathology in relationships of oral and anal response tendencies to dependency and to independence. This formulation, in a way, reverses the problem as one has encountered it throughout the literature. One usually finds clinical examples of the above relationships described in studies of psychopathology. In some of those studies, for instance, emotional disturbances like depression, anxiety attacks, distortions of perception and memory, etc., are explained as consequences of oral fixations and strong dependency striving. It might be of interest to investigate whether the relationship of orality and dependency varies as a function of both degree and kind of psychopathology.

The study to be reported constitutes a replication and extension of an earlier study in which the conceptualization of dependency and autonomous achievement striving<sup>3</sup> was put to an empirical test (2). For purposes of the present report we shall briefly restate the conceptual framework for the specific component measures of dependency and of autonomous achievement striving before we proceed to link them to orality and to anality.

Dependency originates in the helplessness of the human infant. Intervention by the parent to gratify the needs of the infant is necessary for his survival. At first, the infant elicits such protective intervention in the parent through signals of distress only because the parent is alerted to such cues from the child. In that stage the infant reacts primarily to the outcome of the parental intervention rather than to the parent as an external object. Gradually the child reacts not only to the outcome of the

<sup>3</sup> For those who are familiar with the earlier study, we have come to the conclusion that our particular measures of independence are equally characteristic of what is generally meant by autonomous achievement striving or mastery motive.

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intervention, namely, the gratification of its needs, but to the protective intervention itself and to the intervener, the parent. To the extent to which protective intervention is a physical necessity for the child we may speak of instrumental dependence on the parent. When intervention is sought by the child as an end in itself we deal with dependency as a psychological motive. Thus, in essence, we conceive of dependency as the result of associations in the infant's experiences of changes of tensions within the organism with experiences of intervention by a parent in the form of physical contact, nearness, help, attention, and praise. Repeated experiences of such associations will result in dependency drive, which will manifest itself in the form of *seeking* help, attention, recognition, physical contact and nearness to others. Our hypothesis to be tested is that the strength of these five dependency components will vary consistently from child to child.

Autonomous achievement striving, like dependency, has its roots in early infancy. It appears at first as a physical necessity. The infant who cries and struggles manifests unaided effortful behavior in reaction to inner organic tension states. At first, such autonomous striving is a physical fact and necessity and has little resemblance to a similar phenomenon in later life which takes the form of action in a state of distress rather than passive resignation. The concept of autonomous achievement striving was derived by us from an analysis of the child's exploratory behavior. Initially, exploratory activity in the infant appears as crying did earlier, only it is more clearly directed toward the physical environment, not excluding his own body. As the child's sensory and neuromotor system develops, he exerts an increasing amount of effort in his own unaided exploration of the environment. Such efforts result in mounting and decrease of tension within the organism. We assume this to be an essential condition for the development of autonomous achievement striving as a psychological motive.

Since we have chosen spontaneous exploration of the environment by the child as an original experience in which autonomous achievement striving develops, our specific measures were derived from an analysis of that experience. At first, the child starts to act or to take initiative. Once action has been started in exploring the environment, the child encounters obstacles which he tries to overcome. When the obstacle is surmounted, he tries to complete the activity. Each of these steps is reinforced as part of a sequence. This means that we expect an increasing consistency of level in any given child with respect to his trying to take initiative, to overcome obstacles and to complete activities. Two other features were derived from this analysis. To the extent to which a child succeeds in these three aspects of his exploratory activity, to that extent will he derive satisfaction from work, and want or try to do things by himself. These aspects, although not exhaustive, we assume to be genetically essential components of autonomous achievement striving. As in the case of dependency, we assume that components of achievement striving will vary consistently from child to child.



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We can now formulate in a testable way the validity of our proposed concepts in terms of internal consistency of each and of distinguishability from one another. We assume that components of dependency will correlate more positively and more significantly with one another than with components of autonomous achievement striving and vice versa. The reason we are not expecting that dependency and achievement striving will be bipolar has been discussed in an earlier study (2).

The second major problem of this study concerned itself with the genetic anchorage of dependency and of autonomous achievement striving. Our formulations have used experiences of changes in biological drive states in early childhood as a learning factor in the formation of dependency and autonomous achievement striving. We have selected (oral) hunger and (anal) evacuation drives for this purpose. Our measures of drive strength are derived from responses which more or less directly relate to either the organs or the processes by means of which the hunger and evacuation drives are reduced. Although we have confined ourselves in the present study to overt oral and anal behavior manifestations to the exclusion of phantasies and subjective experiences, our response dimensions ranged from nutritive to non-nutritive behavior with respect to orality, and from direct evacuation to spilling, messing and anal talk with regard to anality.

We set out to investigate the specific assumption that dependency will correlate positively with both oral and anal behavior manifestations in early childhood, but more highly with orality than with anality. A positive relationship of dependency with orality was assumed as a function of associations within the child's experiences of oral responses when in a state of mounting and decreasing hunger tension with intervention by parents in the form of help, attention, physical contact and presence, and somewhat later, parental approval and disapproval. To the extent to which a child persists beyond infancy on a heightened level of oral need, to that extent he should expect or seek the type of relationship with parents or other adults which we have defined as dependency.

The correlation of dependency with anality was also expected to be positive, but lower than with orality. This assumption follows from an expectation of generalization within the child's experiences and responses relating to both orality and anality. If such a generalization exists in the child's experiences related to both drive systems, it should produce a similar but probably lesser relationship of anality to dependency as of orality to dependency. The correlation between oral and anal behavior manifestations is clearly an appended hypothesis here.

There are other reasons why the relationship between anality and dependency should at best be moderately positive. Before toilet training, the child experiences satisfaction from evacuation without direct and immediate intervention by the parent. If a child reacts to training with much conflict, it may increase dependency but often in very indirect and pathological forms. Clinical experience, as reflected in the literature, indicates

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that heightened dependency resulting from such conflicts is more likely to be passive (1). We are limiting ourselves to measures of overt and of active dependency striving which may miss a good deal of such heightened indirect and passive dependency striving.

With regard to autonomous achievement striving, we set out to investigate the specific assumptions that it will be inversely correlated with both anality and orality, but more highly negatively with anality. The expectation of a higher inverse relationship of autonomous achievement striving and anality is based on the observation that the development of sphincter and other muscle controls coincide temporally with gross motor development and increased effectiveness of exploratory behavior from which we derived our formulation of autonomous achievement striving. If our observations are correct, complications in the development of sphincter control and in experiences surrounding it should lead to heightened anality. They should have a negative effect on autonomous achievement striving in general as defined by us. Extreme conflict and frustration reactions to training toward sphincter control may produce certain heightened forms of autonomous achievement striving which, however, would fail to meet some of our criteria. Examples of such cases would be a heightened striving to achieve with impaired ability to complete work, with extreme frustration reactions to interferences or obstacles, with over-emphasis on details, with lack of satisfaction from work itself. Such manifestations would result in low scores on our measures of autonomous achievement striving, although more precise controls will eventually be necessary to differentiate between these phenomena and the ones we set out to study.

A lower but still inverse relationship between autonomous achievement striving and orality was expected. Oral mastery is a first step in the progression toward more articulate and complicated ways of manipulating the external environment for the sake of drive or tension reduction. If a child becomes fixated on the oral level or regresses to it, this should interfere with the full utilization of energy and interest to use more articulate motor activity as well as ideational processes in an effective (and realistic) exploration and manipulation of the physical environment. Since our autonomous achievement striving measures have been derived from the latter, fixation on or regression to the oral level of mastery and pleasure seeking should relate inversely with achievement striving.

As a last step in this area of our study, we were interested in investigating the effect of controlling the relationship of dependency and autonomous achievement striving to each other in children. To the extent to which orality and anality are positively related and they rather than other variables are associated with each of the above, the relationship between dependency and autonomous achievement striving should be an inverse one. So far, we have presented a conceptual framework for relationships of orality and anality to each, regardless of whether a child is high in dependency and low in autonomous achievement striving, vice versa, or high

or low in both. Such a question is meaningful only if dependency and autonomous achievement striving measures are not constructed to yield a priori an inverse relationship. Since we have assumed opposite directions for the relationships of orality and anality to dependency and to achievement striving, it follows from this that an inverse relationship between dependency and autonomous achievement striving in children should show an increased association with oral and anal fixations. That means, in the case of a single child, if he is high on orality, he is likely to be high on dependency and simultaneously lower on autonomous achievement striving measures. This formulation does not extend to children who are high or low on both dependency and autonomous achievement striving. Such patterns do not fall within the limited conceptual framework so far presented. We decided to supplement the testing of our conceptual framework within its own limits by systematically separating from a scattergram of our total sample a group of children who show a high inverse relationship between dependency and autonomous achievement striving. This procedure should permit of an additional test of our conceptualized relationships of orality and anality to both dependency and autonomous achievement striving.

Beyond the investigation of a systematic conceptual framework, our study extended to several exploratory phases. A point of interest in our sample was a considerable range in the degree of emotional disturbance among our children. Although no specific assumptions followed from our conceptualization on this point, we hoped that our data would permit some hunches concerning the relationship of our variables to the extent of psychopathology in early childhood.

Our sample of children included four pairs of same-sexed twins. We believe that twinship might be a relevant variable affecting the types of relationships we set out to investigate. Our formulation of dependency as a result of parent-child interaction implies that the presence of two twins should in some way affect both sides of this interaction, and therefore the learning processes in the child which lead to the formation of dependency striving. We planned to explore differences between twins and non-twins in our findings.

The children included in the present study contained an approximately equal number of boys and girls. Beyond the general interest in sex differences, we planned to control this factor in our data to make our findings comparable to the results of another study (13) in this area.

From the foregoing, the present study set out to investigate: (1) whether dependency and autonomous achievement striving are each internally consistent constructs, i.e., whether our suggested component measures of (active) dependency striving correlated more highly with each other than with component measures of autonomous achievement striving and vice versa; (2) whether dependency will correlate positively with both orality and anality, but more highly with orality; whether achievement striving will correlate negatively with both anality and orality, but

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more highly (negatively) with anality; (3) whether an inverse relationship between dependency and autonomous achievement striving will increase our predictions and constitute a more comprehensive test of our conceptual framework. The other aspects of the present study were to be of an exploratory nature to help us in the extension and elaboration of our conceptual framework on the basis of relevant empirical findings. They were as follows: (4) (a) effects of psychopathology, (b) effects of twinship, and (c) effects of sex differences on the relationships studied.

### PROCEDURE

#### *Subjects*

The present study was carried out in the therapeutic nurseries of the Child Development Center over a period of 2½ years. It included 52 children, 25 boys and 27 girls ranging in age from 28 to 74 months. The children came for the most part from middle and lower middle class parents who brought them to the Center to seek help in coping with the children's problems.<sup>4</sup> Among these children were four pairs of twins, nine children who had been diagnosed as borderline psychotic and seven children severely disturbed but unclassifiable in terms of nosology.<sup>5</sup> The remaining 28 children were less disturbed and characterized by difficulties in socialization and in interpersonal relationships.

#### *Construction and Reliability of Measures*

Five scales of dependency and five scales of autonomous achievement striving with seven rating steps on each scale were used by teachers at least three times annually. The procedure of training teachers in the use of this scale has been the same as in an earlier study (2). Each rating was based on the observation of approximately 10 children in a nursery group by their two teachers over one week's period. The scales were as follows:

#### *Dependency Striving*

##### *1. How often does the child seek help?*

By *help* is meant any form of *assistance* from another person, e.g., doing something for the child like dressing, washing, finding a toy for him, pushing him in the swing, protecting him against another child when he is attacked or

<sup>4</sup> Children with organic impairment, mental retardation and psychosis are not taken into the nursery. Only children from intact families, that is, both parents living together and willing to participate in the Center program, were accepted into the nursery. It is the policy of the Center nursery to take in younger siblings of children already enrolled for better study and treatment of the total family. This procedure assures the Center nursery of approximately 20 per cent to 25 per cent children who would otherwise attend "normal" nurseries.

<sup>5</sup> There was full agreement among three judges on classifying 15 children as severely disturbed. On one child, only two judges agreed.

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something is taken away from him, etc., giving instructions and guidance, like demonstrating how to build, play, paint, etc., giving what he asks for, e.g., a toy to play with, color to paint, etc.

Very often and very persistently	Often and persistently	Occasionally and little persistence	Very rarely and without persistence			
7	6	5	4	3	2	1

## 3. How often does the child seek recognition?

By recognition is meant any form of praise and approval. Child comes running to teacher showing her what he did, e.g., exclaiming, "I washed my hands"; telling her that he had carried out a command or request by the teacher; e.g., "I put the blocks back," "I drank all the juice," etc. Calling the teacher to see what he did, e.g., in the sand box, at painting, in the playroom, etc. Shouts to teacher, "Watch me," when on the swing, when on a bicycle, when feeling he is especially good, doing something praiseworthy, etc.

## 5. How often does the child seek physical contact with teacher?

Physical contact: wants to be picked up, holds on to teacher's dress, hugs adult's knee, holds or reaches for teacher's hand, puts arm around teacher's neck (while teacher demonstrates to child, reads to group, on the playground, etc.).

## 7. How often does the child seek attention?

How often does the child manage to keep others occupied with him? Getting another person to occupy herself with the child, e.g., talking to him (answering questions, explaining, watching the child, giving approval, praising the child, scolding, punishing, etc.). Try to ignore whether the child does it in a pleasant or unpleasant way, whether he is clever and skillful or clumsy or inefficient (a nuisance) in his efforts to draw attention, e.g., talking a lot, asking questions, volunteering answers, making a noise, making faces, being uncooperative, disobeying, excelling others, etc. Use as your basic criterion how often he manages to keep others occupied with him.

## 9. How often does the child seek to be near to others?

By *being near* we mean just what it says. The child manages to sit near the teacher (or another child), to play where the teacher is (or where another child or children are) regardless of whether he interacts with the other person or not. If the child is active and skillful, it may express itself in the form of playing with, working with, talking to, offering help, asking for help; on the other hand, if the child is quiet and timid he may just hang around, watch, stand or sit near another individual child, teacher, (observer) or near a group. This differs from attention because it refers just to proximity and does not say anything about the relationship between the child rated to other children or to the teacher when they interact.

## Autonomous Achievement Striving

### 2. How often does the child derive satisfaction from his work?

This can be judged from the following behavior: *The child finishes its activity*, e.g., painting, building, play, etc., without asking teacher for comment; without making derogatory comment on the work of other children; or without showing disturbance or irritation by bullying other children, dashing off wildly, destroying one's own work, etc., *but instead* moving away from a completed activity and getting ready for a new period.

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### 4. *How often does the child attempt to carry out routine tasks by himself?*

Routine tasks: e.g., dressing, washing, eating, toilet behavior, etc. The rater is to put special emphasis on the child's *attempts* to carry out these routine tasks by himself. The occurrence of such attempts can be observed directly by seeing the child trying to dress by himself, to dress or undress at toilet or swimming pool, trying to get the water running for washing, etc. (while the teacher assisted another child), or the child may be found doing any of these in a clumsy way *but* doing them as best he can. (The rater must be careful to not let her feeling of a self-evident duty to assist the child in all routines when the child needs assistance interfere with an objective appraisal.)

### 6. *How often does the child attempt to overcome obstacles in the environment by himself?*

By *obstacle* we mean missing a necessary tool or object in play or work, having misplaced a towel, a toy, clothing apparel, etc., desired objects that are placed out of reach, etc. The extent of the child's striving to overcome such obstacles *by himself* can be seen when, after his turning away from an ongoing activity (play or work), he returns and continues after having overcome the obstacle. This is distinguished from reaction to such obstacles which are characterized by the child's interrupting his play or work to join other children or another child, to scream out loud—"I need a hammer," "I need another truck"—to go from child to child begging, demanding, and finally grabbing the desired object, or simply beginning to daydream, wandering off aimlessly or crying. How often does the child seek or strive to overcome obstacles in the environment on his own without getting distracted from his ongoing activity?

### 8. *How often does the child take initiative in carrying out his own activity?*

When the child comes into the playroom, art room, or playground he knows what he wants to do and proceeds to do so, e.g., sandbox, bicycle, swing, building a ship, or a tunnel with blocks, etc. This can be distinguished from going out into the playground and looking around for someone to join, clinging to the teacher, standing or wandering around aimlessly until teacher takes initiative, asking someone to play with him, or mostly wanting toys or tools which other children have already begun to use. It does not matter whether another child enters his activity occasionally, the main criteria being whether he has his own ideas and proceeds to carry them out.

### 10. *How often does the child complete an activity?*

Once the task is set by the teacher or selected by the child, the child carries it out to completion, e.g., construction, play, art, etc. This is to be distinguished from giving up easily, getting quickly bored, disinterested or distracted. It is also to be distinguished from rigid perseveration, i.e., a child just keeping on doing one thing regardless whether it is a successful or unsuccessful attack on the task. Use as your basic criterion how often a child carries an activity to its completion.

With turnover in teaching staff, in three consecutive years 11 teachers participated in the rating. The product moment coefficients of reliability between teachers on the five component dependency scales<sup>6</sup> ranged from

<sup>6</sup> The dependency measures used in this study were confined to the child-teacher interaction. Measures for the children's dependency on other children were obtained but have not been included in the present study.

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+ .62 to + .84 with a median of + .78, and on the five scales of achievement striving, from + .67 to + .80 with a median of + .75. Eighteen reliability coefficients ( $\rho$ ) for summated dependency scores, i.e., the sums of component scores computed separately for each rater pair on every single rating, ranged from + .67 to + .91 with a median of + .84; 17 coefficients for summated component scores of achievement striving, from + .69 to + .93 with a median of + .83. This does not include two of the reliability coefficients for dependency and three for achievement striving scores (12 per cent of the total) which were not used as data because they did not reach significance ( $p < .05$ ).

We used in our analysis all reliable ratings available for each child. In the case of children who were in our nursery for two or three years, these total scores included ratings made by different teacher pairs in successive years. An analysis of variance was carried out to test the justifiability of such a procedure. The  $F$  ratio for the variance between children was 12.31 ( $df_1=31$ ,  $df_2=100$ ) and significant ( $p < .001$ ) when based on three or more dependency ratings by the same or by different teacher pairs for any one child. The  $F$  ratio for the variance between children on scores of autonomous achievement striving was 12.45 ( $df_1=32$ ,  $df_2=104$ ) and significant ( $p < .001$ ). This means in effect that the children's relative position in the group did not change appreciably in teacher pairs who rated them at various times in different years of their attendance in the nursery.

Our data concerning the children's oral and anal behavior manifestations in the nursery were obtained from extensive annual summaries written

TABLE I  
ORAL AND ANAL BEHAVIOR MANIFESTATIONS USED IN THIS STUDY

Oral	Anal
1. Biting	1. Lack of bowel control
2. Nailbiting	2. Spilling
3. Putting objects in mouth	3. Smearing
4. Sucking	4. Messing with clay, paint, sand, etc.
5. Over-eating	5. Playing with water
6. Finicking about food	6. Throwing food or objects
7. Refusing food	7. Avoiding messing
8. Wanting to be fed	8. Avoiding use of toilet
9. Asking for bottle	9. Using anal words
10. Manipulating mouth and lips	
11. Spitting	
12. Drooling	
13. Licking	
14. Talking like baby	
15. Talking nonsense	
16. Licking mucus	



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together by two teachers on every child in their group and based on 180 days of contact with the children. The teachers followed an outline of which one section asked for descriptions of outstanding oral and anal behavior manifestations in every child. Only this section was used for content analysis although it constituted only about 8 per cent of the total outline and even less of the finally written summaries.

In the content analysis presence or absence of mention of any of the oral and anal behavior manifestations (see Table 1) was recorded by coders. Agreement between two coders on 11 cases ranged for oral items from .50 to 1.00 with perfect agreement in over half the cases, and for anal items from .80 to 1.00 with a median of .83.

## RESULTS AND DISCUSSION

### *Dependency and Autonomous Achievement Striving*

Our first hypothesis was that dependency and achievement striving are each internally consistent. Component measures of dependency should then correlate more highly with each other than with component measures of achievement striving, and vice versa. Inspection of Table 2 reveals (a) that all correlations *within* dependency and *within* achievement striving are positive, whereas only 50 per cent of the correlations *between* the two sets of components are positive; (b) that 19 of the 20 correlations *within* the two sets are statistically significant ( $p < .01$ ), whereas 19 of the 25 correlations *between* the two sets of components fail to reach statistical significance ( $p < .05$ ); and (c) that, with one exception, all correlations *within* dependency and *within* achievement striving are higher than any positive correlation *between* the two sets of components. This means, with the one exception cited, that there is no overlap between the lowest significant *within* correlations and the highest positive correlations *between* the two sets of components. We may consider these findings to be strongly confirmative of our first hypothesis. These findings also confirm the results of the original study (2) and of another study (5). In the earlier investigation this writer tested the internal consistency of the five dependency components and the five components of achievement striving (independence) on a sample of preschool children who attended a "normal" nursery.

Two more results emerge from inspection of Table 2. First, the diagonal of the rectangle representing correlations between the two sets of components gives correlations between scales which were always rated in sequence to each other. These coefficients are  $-.02$ ,  $.07$ ,  $.09$ ,  $0$  and  $.16$ . Since all of these coefficients approximate zero, we may conclude that position of items had no effect on the direction of the correlations between components.

Secondly, when we inspect the correlations *within* dependency and *within* achievement striving, we find that each set has one component which is consistently weaker in relation to the rest than the other four. The



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TABLE 2

PRODUCT-MOMENT COEFFICIENTS OF CORRELATION WITHIN AND BETWEEN FIVE COMPONENTS OF DEPENDENCY AND FIVE COMPONENTS OF ACHIEVEMENT STRIVING, BASED ON 51 CHILDREN RANGING IN AGE FROM 28 MONTHS TO 74 MONTHS

Scales	1	2	3	4	5	6	7	8	9
<i>Dependency</i>									
1. Seeking help . . . .									
2. Seeking recognition . . . . .	.50								
3. Seeking physical contact . . . . .	.61	.48							
4. Seeking attention . . . . .	.78	.53	.71						
5. Seeking physical nearness . . . . .	.66	.48	.83	.76					
<i>Achievement Striving</i>									
6. Deriving satisfaction from work . .	-.02	.29	.29	.04	.08				
7. Trying to do routines by oneself . .	-.41	.07	-.12	-.26	-.10	.40			
8. Trying to overcome obstacles . .	-.28	.10	.09	-.02	-.20	.64	.37		
9. Trying to initiate activities . . . .	-.13	.17	.22	.00	-.09	.70	.21	.83	
10. Trying to complete activities . . .	-.02	.30	.32	-.09	.16	.90	.41	.67	.68

$N = 51$ ,  $p < .01$  for  $r = .36$ ,  $p < .05$  for  $r = .28$

correlations of *seeking recognition* with the other four components of dependency range from .48 to .53, whereas the correlations among other dependency components range from .61 to .83. Similar findings have emerged from other recent studies of dependency in early childhood. One investigator found that seeking praise correlated less with seeking help and with attention-seeking than the latter behaviors did with each other (4, 5). Another investigator, who separated dependent behavior into two categories, "Clinging to and seeking affection from teacher" and "Seeking attention and approval from teacher," reports a positive but low correlation between these two categories in four- and five-year-old children (6).<sup>7</sup> These

<sup>7</sup> Heathers reached the conclusion from his findings that emotional dependency variables are uncorrelated and do not constitute a general trait. It must have been an oversight when he stated: "These findings are consistent with those reported by Beller," since this writer has demonstrated the opposite. One of the reasons for Heathers' (6) findings may be that he has classified dependent behavior into two categories which are less related than other dependency variables.

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findings may be due to the fact that parental recognition in the form of praise and approval for nondependent behavior is an important factor in the growth of autonomous achievement striving with age, and in the simultaneous decline of more infantile strivings such as seeking help, contact, proximity and sheer attention. The arrival of a younger sibling who has first rights to infantile dependency claims may force early inhibition of the same in the older child. Similarly, according to clinical experience, a fusion of aggressive and dependent drives may result in anxiety over rejection or punishment. If reaction formation is the prevalent defense against such anxiety, seeking praise and approval for being a good child, i.e., not aggressive and not dependent, may constitute a main substitute gratification for other unexpressed dependency cravings.

When we turn to the components of achievement striving, we find that correlations of *trying to do routines by oneself* with the four other components range from .21 to .41, whereas the correlations among the latter range from .64 to .90. As in the case of *seeking recognition* and other dependency components, this component accounts for all correlations below  $r=.60$  among component measures of achievement striving. It might be that *trying to do routines by oneself* often signifies a need for conformity rather than indicating autonomous achievement striving as we have conceptualized it.

We feel that these two weaker components should not be excluded because each still correlated significantly with its set. However, further research concerning these components might throw important new light on the composition of dependency and achievement striving.

### *Relationships between Dependency, Autonomous Achievement Striving, Orality and Anality*

Our second hypothesis concerns the conceptualized genetic link of dependency and achievement striving to oral and anal response tendencies. We expected on the basis of our conceptual framework that dependency should be positively correlated with both orality and anality, but more highly with orality; achievement striving should be negatively correlated with both orality and anality but more highly negatively with anality. The findings presented in Table 3, Part A, are based on summated scores.<sup>8</sup> We find that dependency relates positively to orality ( $r=.30$ ) and to anality ( $r=.15$ ). Achievement striving relates negatively to orality ( $r=-.15$ ) and to anality ( $r=-.30$ ). The stronger and statistically significant relationships are between dependency and orality, and between achievement striving and anality. These findings tend to support our hypotheses both in direction and in the relative sizes of our predicted relationships. However, the relationships of anality-dependency and of orality-achievement striving are weak and not significant.

<sup>8</sup> See Table 1 for specific items from which the total oral and anal scores were derived.

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TABLE 3

PRODUCT-MOMENT COEFFICIENTS OF CORRELATION BETWEEN  
DEPENDENCY, ACHIEVEMENT STRIVING, ORALITY AND ANALITY BASED  
ON 49 CHILDREN RANGING IN AGE FROM 28 TO 74 MONTHS

Items	1	2	3
<i>Part A—Total Group (N = 49)</i>			
1. Dependency .....			
2. Achievement Striving .....	-.01		
3. Orality .....	.30†	-.15	
4. Anality .....	.15	-.30†	.53*
<i>Part B—Total Group Minus Severely Disturbed Children (N = 33)</i>			
1. Dependency .....			
2. Achievement Striving .....	.02		
3. Orality .....	.51*	-.14	
4. Anality .....	.25	-.34†	.55*
<i>Part C—Total Group Minus Twins and Severely Disturbed Children (N = 25)</i>			
1. Dependency .....			
2. Achievement Striving .....	-.01		
3. Orality .....	.65*	-.13	
4. Anality .....	.32	-.40†	.55*

\*  $p < .01$ . †  $p < .05$ .

The correlation between dependency and achievement striving is zero ( $r = -.01$ ). This finding is in accord with conceptualization in the present and earlier study (2) and with the findings of another study (6). Yet, this relationship was considerably more negative in the earlier study (2). The different findings may be due to the fact that in the present study scores of children were based on as many as seven repeated ratings over a period of 2½ years and, therefore, are more stable than the one rating on which the earlier study was based.

The correlation between oral and anal behavior manifestations ( $r = .53$ ) is the highest one in Table 3, Part A. This finding supports our appended hypothesis of generalization of oral and anal response tendencies within children. The fact that the relationship between dependency and achievement striving measures is zero increases the importance of the different relationships of the two to orality and anality. It points toward the importance of variations in the early experiences related to hunger and elimination drive states as learning factors in the formation of dependency and achievement striving.

*Effects of severity of emotional disturbance, twinship and sex differences.* When we inspect Table 3, Part B, we find that severe emotional

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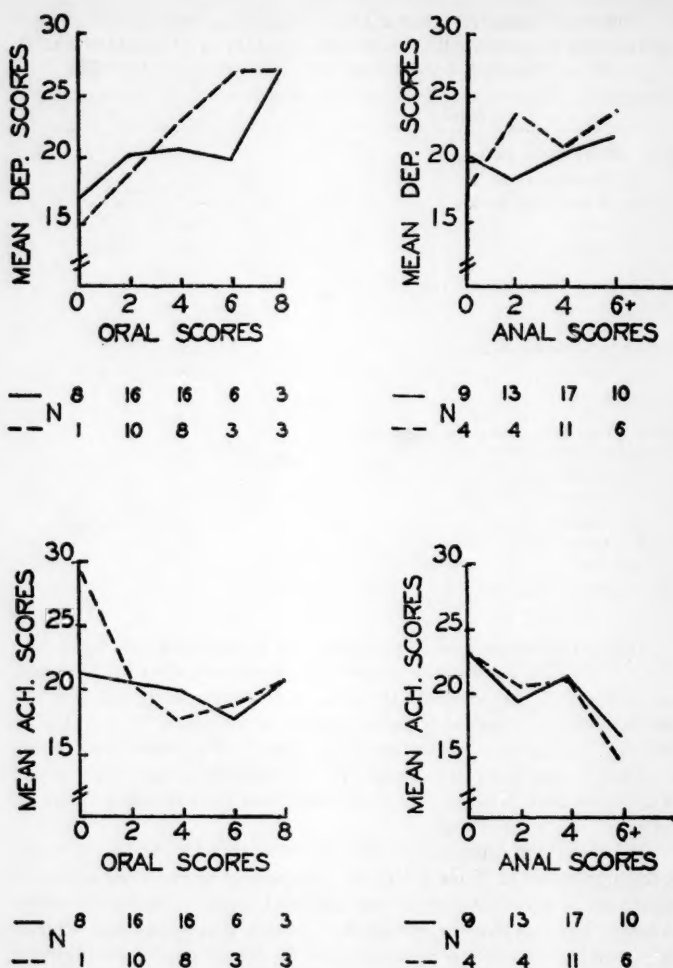


FIGURE 1—Mean Dependency (Dep.) and Mean Autonomous Achievement Striving (Ach.) scores plotted against Oral and Anal scores, based on the total sample (—)  $N=49$ , and based on the total minus twins and severely disturbed children (— —)  $N=25$ .

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disturbance affects considerably the relationships of dependency to orality. This correlation increases from .30 to .51 when we remove the severely emotionally disturbed children from the total group. It would seem advisable to concentrate on closer study of the effect of psychopathology on the relationship of dependency and orality. Our specific findings tend to confirm the positive link of "oral dependent" for the lesser rather than for the more severely disturbed children.

Twinship was the other factor which we set out to explore in relation to our main variables. Eight twins constitute a very small group for this type of investigation. However, we find changes in our group when, in addition to removing severely disturbed children, we take out the twins (see Figure 1). The correlations between dependency, orality and anality increases from the initial sizes of .30 and .15 in the total group to .65 and .32 while the initial relationship between achievement striving and anality ( $r = -.30$ ) shows a slight increase ( $r = -.40$ ) in the predicted direction (see Table 3, Part A and Part C). The other three correlations remain almost entirely unchanged. We get a clearer picture of these changes when we also inspect the findings for the group of severely disturbed children and for the group of twins. Table 4, Part A and Part B, shows that only the relationship between orality and anality is high in both these groups ( $r = .48$ ,  $r = .54$ ) and unaffected by the conditions which characterize these groups. All other relationships are near zero and fail to show the patterning hypothesized in our conceptional framework. We conclude from these findings that both psychopathology and twinship affect the formation of object relations, especially dependency on adults as it relates to oral and anal behavior manifestations in early childhood.

TABLE 4  
PRODUCT-MOMENT COEFFICIENTS OF CORRELATION BETWEEN  
DEPENDENCY, ACHIEVEMENT STRIVING, ORALITY AND ANALITY BASED  
ON 16 SEVERELY DISTURBED CHILDREN AND ON 8 TWINS

Items	1	2	3
<i>Part A—Severely Disturbed Children* (N = 16)</i>			
1. Dependency .....			
2. Achievement Striving .....	-.01		
3. Orality .....	-.25	-.18	
4. Anality .....	-.26	-.19	.48
<i>Part B—Twins† (N = 8)</i>			
1. Dependency .....			
2. Achievement Striving .....	.27		
3. Orality .....	.19	-.25	
4. Anality .....	.01	-.07	.54

\*  $p < .05$  for  $r = .50$ .    †  $p < .05$  for  $r = .71$ .

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We examined the effect of sex differences on the relationships studied. Inspection of Table 5 shows that our hypotheses are generally more strongly confirmed in girls than in boys. This applies particularly to the relationships of achievement striving to orality, and of dependency to orality. The correlation between dependency and achievement striving tend to go in opposite direction, i.e., positive for boys and the inverse for girls, especially in the less disturbed group of children. Since most of the coefficients in this table are not significant (nor are most of the differences between coefficients), it is too early to attempt interpretations. However, control of sex differences in further research with these relationships is indicated.

TABLE 5

PRODUCT-MOMENT COEFFICIENTS OF CORRELATION BETWEEN  
DEPENDENCY, ACHIEVEMENT STRIVING, ORALITY AND ANALITY IN 49  
BOYS AND GIRLS, AND IN 33 BOYS AND GIRLS—A GROUP FROM  
WHICH SEVERELY DISTURBED CHILDREN WERE REMOVED

Variables	TOTAL GROUP		TOTAL GROUP MINUS SEVERELY DISTURBED	
	Boys N=25	Girls N=24	Boys N=15	Girls N=18
Dependency - Achievement Striving . . . . .	.18	-.14	.41	-.45
Dependency - Orality . . . . .	.15	.39	.42	.60*
Dependency - Anality . . . . .	.08	.19	.42	.34
Achievement Striving - Orality . . . . .	.06	-.37	.07	-.45
Achievement Striving - Anality . . . . .	-.41†	-.33	-.38	-.23
Orality - Anality . . . . .	.46†	.74*	.57†	.64*

\*  $p < .01$ . †  $p < .05$ .

The separate analysis of our findings for boys and girls makes possible a comparison with results reported from another study. Sears *et al.* (13) found a positive relationship between infant feeding frustration and dependency,<sup>9</sup> i.e.,  $r = .29$  for boys and  $r = .52$  for girls. Our finding of a positive relationship between orality and dependency is very much in accord with those results. This is especially true for the less disturbed boys ( $r = .42$ ) and girls ( $r = .60$ ) who are more similar to the group of children studied by Sears *et al.* (13). The similarity of the findings from the two studies tends to support the hypothesis that early oral frustration experiences produce a heightened level of oral responsiveness, and that both are positively associated with dependency strivings in children. There is supporting evidence from several studies for the association of experi-

<sup>9</sup> One set of dependency measures in that study were the same as the ones used in the present study.

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ences of early oral frustration and oral fixation (8, 10, 17). However, this evidence pertains primarily to thumbsucking, which, as shall be seen later, relates poorly to other oral behavior manifestations and poorly to dependency. We must therefore consider these similar findings merely to point toward an integrated research program in which early oral frustrations and oral fixations (not limited to thumbsucking) are studied in relation to each other and in relation to the formation of dependency striving.

Sears *et al.* (13) found no relationship between severity of toilet training and dependency. Our findings show a low but increasingly positive relationship between anality and dependency when severity of disturbance and sex differences are controlled. We conclude from these divergent findings that generalizations between oral and anal drive systems, which we found to be high, and experiences other than (only) severity of toilet training will be fruitful directions for research in the relationship of anality to dependency.

*Effects of an inverse relationship between dependency and autonomous achievement striving.* Having examined the effect of external factors on our hypothesized relationships, we turn to the investigation of increased controls and refinement within the four variables. In our third hypothesis we stated that an inverse relationship between dependency and achievement striving measures, that is, children who are high on one, low on the other, or average on both, should show an increase in the predicted relation-

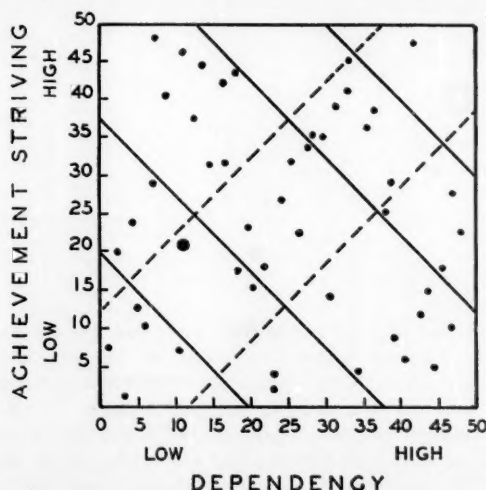


FIGURE 2—Scattergram of Dependency and of Autonomous Achievement Striving ranks, showing plotting of middle and outer bands in negative (—) and positive (---) directions.

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ships of orality and anality to each. Since the correlation between dependency and achievement striving measures was zero (i.e.,  $r = .01$ ) in our sample, such a procedure becomes meaningful. We selected three groups of children by drawing lines at an angle of 45 degrees from both the  $x$ -axis and  $y$ -axis (see Figure 2). This divided the scattergram in three sections so that 47 per cent of the sample fall in the middle band, 41 per

TABLE 6

PRODUCT-MOMENT COEFFICIENTS OF CORRELATION BETWEEN DEPENDENCY, ACHIEVEMENT STRIVING, ORALITY AND ANALITY BASED ON A GROUP OF 23 CHILDREN IN WHICH DEPENDENCY AND ACHIEVEMENT STRIVING MEASURES ARE NEGATIVELY CORRELATED (GROUP A), ON A GROUP OF 20 CHILDREN IN WHICH THESE TWO VARIABLES ARE NOT SO CORRELATED (GROUP B), AND ON A GROUP OF 23 CHILDREN IN WHICH THESE TWO VARIABLES ARE POSITIVELY CORRELATED (GROUP C)

Items	1	2	3
<i>Part A—Group A (N = 23)</i>			
1. Dependency .....			
2. Achievement Striving .....	-.89*		
3. Orality .....	.61*	-.57*	
4. Anality .....	.43†	-.50†	.74*
<i>Part B—Group B (N = 20)</i>			
1. Dependency .....			
2. Achievement Striving .....	.27		
3. Orality .....	-.04	-.07	
4. Anality .....	-.24	-.34	.35
<i>Part C—Group C (N = 23)</i>			
1. Dependency .....			
2. Achievement Striving .....	.90*		
3. Orality .....	.17	.22	
4. Anality .....	.04	.07	.49†

\*  $p < .01$ . †  $p < .05$ .

cent into the two adjacent bands, and 12 per cent into the two extreme outer bands. When we inspect the findings for the group in the middle band in Table 6, Part A, we see that the correlation between dependency and achievement striving measures is highly negative, i.e.,  $r = -.89$ . A comparison of the four crucial correlations in Table 3, Part A, and Table 6, Part A, shows an over-all increase of all four coefficients in the predicted directions. The correlations of dependency to orality and anality increased from .30 and .15 to .61 and .43. The correlations of achievement striving measures to orality and anality increased from  $-.15$  and  $-.30$  to  $-.57$  and  $-.50$ . These changes make all our predicted relationships statistically



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significant ( $p < .05$  or  $p < .01$ ). The correlations between oral and anal behavior manifestations also increased from .53 to .74 as a result of the controlled inverse relationship between dependency and achievement striving. It can be seen from Table 6, Part B, that none of the relationships in the groups from the two adjacent outer bands are in the predicted directions.

In order to explore whether this procedure has produced higher correlations merely as a function of increased range and greater variability in the middle band, we reversed the direction of the middle band (see Figure 2). Inspection of Table 6, Part C, shows that none of our predictions was confirmed when this was done. We feel that the marked effect of an inverse relationship between dependency and achievement striving on the relationship of orality and anality to each makes further research

TABLE 7

COMPARISONS OF PERCENTAGES OF ORAL BEHAVIOR MANIFESTATIONS IN ABOVE AND BELOW MEDIAN GROUPS OF DEPENDENCY AND OF ACHIEVEMENT STRIVING, BASED ON 49 CHILDREN RANGING IN AGE FROM 28 TO 74 MONTHS

	P E R C E N T A G E S				
	DEPENDENCY		ACHIEVEMENT STRIVING		
<i>Oral Behavior Manifestations</i>	Above Median	Below Median	Above Median	Below Median	<i>Total</i>
1. Biting .....	.28	.21	.24	.25	.24
2. Nailbiting .....	.04	.08	.04	.08	.06
3. Putting objects in mouth .....	.12	.04	.08	.08	.08
4. Sucking .....	.32	.42	.28	.46	.37
5. Over-eating .....	.24	.17	.12	.29	.20
6. Finicking about food .....	.36	.42	.32	.46	.39
7. Refusing food .....	.28	.17	.16	.29	.22
8. Wanting to be fed .....	.08	.13	.04	.17	.10
9. Asking for bottle .....	.12	.04	.08	.08	.08
10. Manipulating mouth and lips ..	.24	.08	.24	.08	.16
11. Spitting .....	.52	.21†	.36	.38	.37
12. Drooling .....	.20	.04	.08	.17	.12
13. Licking .....	.24	.21	.12	.33‡	.22
14. Talking like baby .....	.40	.25	.24	.42	.33
15. Talking nonsense .....	.44	.46	.44	.46	.45
16. Licking mucus .....	.08	.00	.00	.08	.04
	<i>p</i> < .01		<i>p</i> < .01		

NOTE.—Significance of differences (†, ‡) as tested by chi square with correction for continuity ( $df = 1$ ), and levels of significance ( $p$ ) for rank differences on all items based on paired replicate test.

†  $p < .05$ . ‡  $p < .10$ .

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desirable to find out more what other factors determine the relationship between dependency and autonomous achievement striving in children.

So far, all findings presented concerning the relationships between dependency-autonomous achievement striving and oral-anal behavior manifestations have been based on total, or summated, scores. We have already reported the results of a detailed analysis of component measures of dependency and achievement striving. Now we shall turn to the outcome of a more detailed analysis of specific oral and anal responses.

*Relationships of specific oral and anal behavior manifestations to dependency and autonomous achievement striving.* As a first step, we analyzed the relationships of total scores on dependency and of achievement striving to specific oral and anal behavior manifestations. Inspection of Table 7 shows that 12 out of 16 oral responses were noted more often in the above than in the below median dependency group. Whereas only one of these 12 differences, i.e., *spitting*, is statistically significant ( $p < .05$ ) as tested by chi square,<sup>10</sup> the over-all differences on all 16 items as tested by Wilcoxon's paired replicate test (16) are significant ( $p < .01$ ) and in the predicted direction. Of the differences obtained from comparisons of above and below median achievement striving groups on specific oral responses presented in the third and fourth columns of Table 7, 13 out of 16 run, as predicted, in the opposite direction to that found in comparisons between high and low dependency groups. Again, we find that whereas only one of these differences, i.e., *licking*, approaches statistical significance ( $p < .10$ ) the over-all differences are significant ( $p < .01$ ) as tested by the paired replicate test.

When we inspect findings on specific anal responses in Table 8, we find that 67 per cent of above and below median group comparisons yield differences in the expected direction for both dependency and achievement striving. Only the over-all comparisons of high and low achievement striving groups on percentage of anal response are significant ( $p < .03$ ) as tested by the paired replicate test. In summary, we may say that the analysis on specific oral and anal responses bears out our conceptualization and results based on summated scores. Dependency shows a positive relationship to both orality and anality, but only the former is significant. Achievement striving shows a significant inverse relationship to both orality and anality.

Additional aspects emerge from a closer examination of Tables 7 and 8. First, we find that on oral items two out of 32 (6 per cent) and on anal items six out of 18 (33 per cent) specific comparisons approach significance. This might indicate that learning (by association) with respect to orality, which takes place at an extremely early age, is more generalized than learning around anality, which occurs at a later developmental stage and shows more differential relationships of specific anal behavior manifestations

<sup>10</sup> Based on a two-tailed test with Yates' correction for continuity.

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TABLE 8

COMPARISONS OF PERCENTAGES OF ANAL BEHAVIOR MANIFESTATIONS  
IN ABOVE AND BELOW MEDIAN GROUPS OF DEPENDENCY AND  
OF ACHIEVEMENT STRIVING, BASED ON 49 CHILDREN  
RANGING IN AGE FROM 28 TO 74 MONTHS

Anal Behavior Manifestations	P E R C E N T A G E S					Total
	DEPENDENCY		ACHIEVEMENT STRIVING			
	Above Median	Below Median	Above Median	Below Median		
1. Lack of bowel control .....	.20	.25	.08	.38†	.22	
2. Spilling .....	.40	.29	.20	.50†	.35	
3. Smearing .....	.24	.13	.16	.21	.18	
4. Messing with clay, paint, sand ..	.40	.54	.48	.46	.47	
5. Playing with water .....	.48	.46	.48	.46	.47	
6. Throwing food or objects .....	.60	.38‡	.44	.54	.49	
7. Avoiding messing .....	.44	.33	.28	.50‡	.39	
8. Avoiding use of toilet .....	.20	.25	.12	.33‡	.22	
9. Using anal words .....	.76	.50‡	.64	.63	.63	
	p < .21		p < .03			

NOTE.—Significance of differences (†,‡) as tested by chi square with correction for continuity ( $df = 1$ ), and levels of significance ( $p$ ) for rank differences on all items based on paired replicate test.

†  $p < .05$ .   ‡  $p < .10$ .

to achievement striving. It is further interesting that the two anal responses which approach significance in their positive correlation with dependency overlap with orality—namely, *throwing of food or objects* and *using anal words*. Such a finding lends additional support to our hypothesis of generalization between orality and anality and its effect on the relationship of anality to dependency.

#### Item Analysis of Oral and Anal Behavior Manifestations

We now turn to a refinement of our dimensions of orality and of anality and to a further exploration of our hypotheses with more internally consistent dimensions of oral and anal behavior manifestations. This will be the last step in the sequence of testing our conceptual framework with increased refinement of our variables.

A first step in our item analysis consisted of determining the contribution of single items to the total score. The procedure consisted of a  $t$ -test comparison of the mean total oral score for the group of children in whom a given response tendency,<sup>11</sup> i.e., *biting*, was noted with the mean total

<sup>11</sup> One was subtracted from the mean score for children with the item in question to remove the contribution of that item to the total score.

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score of the children in whom *biting* was not noted. The second step consisted of the computation of *phi* coefficients of association for every oral item with all other oral items, and similarly for every anal item with all other anal items. Here, we omitted those items which were noted in less than 10 per cent of the children.

TABLE 9

COMPARISONS OF DIFFERENCES (*t*) AND SIGNIFICANCE LEVELS (*p*) BETWEEN AVERAGES BASED ON TOTAL ORAL SCORES OF CHILDREN IN WHOM A SPECIFIC ORAL BEHAVIOR MANIFESTATION WAS NOTED ( $M_1$ ) AND CHILDREN IN WHOM IT WAS NOT NOTED ( $M_2$ ); THESE FINDINGS BASED ON 49 CHILDREN RANGING IN AGE FROM 28 TO 74 MONTHS

Oral Behavior Manifestations	$(M_1 - 1) - M_2$	<i>t</i>	<i>p</i>
1. Biting .....	1.78	2.78	<.01
2. Nailbiting .....	....	....	....
3. Putting objects in mouth .....	....	....	....
4. Sucking .....	-.02	-.03	ns
5. Over-eating .....	1.69	2.20	<.05
6. Finicking about food .....	-.78	-1.18	ns
7. Refusing food .....	1.56	2.26	<.05
8. Wanting to be fed .....	....	....	....
9. Asking for bottle .....	....	....	....
10. Manipulating mouth and lips .....	.91	1.08	ns
11. Spitting .....	1.65	2.98	<.01
12. Drooling .....	2.24	2.56	<.02
13. Licking .....	2.38	3.92	<.01
14. Talking like baby .....	-.02	-.03	ns
15. Talking nonsense .....	-.04	-.06	ns
16. Licking mucus .....	....	....	....

NOTE.—Comparisons not tested statistically on items left blank because the frequency for them was less than 10 per cent in the total group.

Our *t*-test analysis yielded six items which contributed significantly to the total oral score (see Table 9). They were *over-eating*, *refusing food*, *biting*, *spitting*, *licking* and *drooling*. When we intercorrelated all the oral items, we found that all significant *phi* relationships fall either directly among these six items or involve one of them (see Table 10). We may therefore conclude that these six oral behavior manifestations constitute the core of our orality measures.

It is of interest to note that all of the six core items are directly involved in oral nutritive behavior. This does not apply to the majority of peripheral items analyzed in this way, namely, *talking like baby*, *talking nonsense*, and (self) *manipulating mouth and lips*.

A second observation of interest is that the six core oral items occur in earliest infancy, and earlier than at least some of the oral behaviors which

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TABLE 10

PHI COEFFICIENTS OF ASSOCIATION AMONG 11 ORAL BEHAVIOR  
MANIFESTATIONS NOTED IN 49 CHILDREN RANGING IN  
AGE FROM 28 TO 74 MONTHS

Oral Behavior Manifestations	1	2	3	4	5	6	7	8	9	10
1. Over-eating										
2. Refusing food	— .21									
3. Biting	.18	.15								
4. Spitting	.35 <sup>†</sup>	.20	.45*							
5. Licking	.08	.41 <sup>†</sup>	.26	.48 <sup>†</sup>						
6. Drooling	.25	.20	.08	.36 <sup>†</sup>	.69*					
7. Sucking	.14	.00	— .04	— .14	— .11	— .16				
8. Finicking about food	— .30 <sup>‡</sup>	.07	.26	.00	— .13	— .17	.26			
9. Manipulating mouth and lips	— .09	.03	.13	.12	.29	.00	— .11	— .24		
10. Talking like baby	.08	.04	.01	.10	.15	— .13	.01	.07	— .07	
11. Talking nonsense	— .04	.20	.24	.08	.10	.41 <sup>†</sup>	— .18	— .04	.05	— .10

\*  $p < .01$ .    <sup>†</sup>  $p < .05$ .    <sup>‡</sup>  $p < .10$ .

show little intracorrelation. This not only supports an inference made earlier but may in part explain the finding which follows. We find that the high dependency children manifest higher orality on every one of the six core oral items but fail to do so on four of the six other oral items. Thus, the link between dependency and orality, as suggested by Sears *et al.* (13), might be one which is formed very early in infancy.

Another factor which might have bearing on this finding is the extent to which various oral behavior manifestations are involved in "object relations" in the psychoanalytic sense of the term. The core oral items of *refusing food*, *biting*, and *spitting*, as well as *over-eating* and *licking*, point toward rejection, aggression, greed, and ambivalence in relation to external objects. The other oral items, as for instance *talking nonsense*, *finicking about food*, *thumbsucking*, and (self) *manipulating mouth and lips*, point less clearly toward specific relations to objects.<sup>12</sup> This aspect of our finding

<sup>12</sup> In fact, thumbsucking, once established, is primarily self- rather than object-related, which may be one of the reasons it fails to relate to dependency and such attempts to extinguish extreme forms of it in children have encountered so much resistance and difficulty.

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has considerable relevance for an extensive body of literature which has come out of psychoanalytic clinical studies which have pointed to early oral experiences as essential in the formation of "object relations" and character formation. Our data do not lend themselves for an empirical test or elaboration of psychoanalytic conceptualization in this area. However, most of our core oral items happen to be the ones which relate most consistently to our own dependency measures and their meaning points to various object relations and character traits as was pointed out above. This points toward a sound empirical genetic basis for clinical psychoanalytic observations and inferences. It should also encourage further empirical research with children to determine systematically the formation of relationships between orality, dependency, and specific object relations.

When we turn to comparisons of above and below median groups of achievement striving, we find the following: the low achievement striving group shows a higher incidence of orality on all six *core* oral items and also on five of the six other oral items. This more generalized but not higher relationship between orality and achievement striving can be explained within our conceptual framework. If low achievement striving were due to complications in evacuatory experiences, this might instigate a regression to an earlier level of gratification, namely, the oral level. Regression might extend to a more generalized pattern of responses including both the core oral items as well as the more peripheral ones. We feel that such an explanation could be tested empirically.

When we turn to anal behavior manifestations, we find that *lack of bowel control, spilling, smearing, playing with water, and throwing of food or objects* contribute significantly to the total anality score and that *avoid-*

TABLE II

COMPARISONS OF DIFFERENCES ( $t$ ) AND SIGNIFICANCE LEVELS ( $p$ ) BETWEEN AVERAGES BASED ON TOTAL ANAL SCORES OF CHILDREN IN WHOM A SPECIFIC ANAL BEHAVIOR MANIFESTATION WAS NOTED ( $M_1$ ) AND CHILDREN IN WHOM IT WAS NOT NOTED ( $M_2$ ); THESE FINDINGS BASED ON 49 CHILDREN RANGING IN AGE FROM 28 TO 74 MONTHS

<i>Anal Behavior Manifestations</i>	$(M_1 - 1) - M_2$	$t$	$p$
1. Lack of bowel control .....	1.71	2.65	<.01
2. Spilling .....	1.87	3.67	<.01
3. Smearing .....	1.66	2.32	<.02
4. Messing with clay, paint, sand, etc. ....	.85	.01	ns
5. Playing with water .....	1.42	2.68	<.01
6. Throwing food or objects .....	2.01	4.39	<.01
7. Avoiding messing .....	.24	.39	ns
8. Avoiding use of toilet .....	1.24	1.83	ns
9. Using anal words .....	.57	.94	ns

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ing use of toilet approaches that criterion (see Table 11). Again, we find that all the highest item intercorrelations involve in every instance one of the five core anal items (see Table 12). When we examine the three anal responses which clearly fail to contribute to the total anal score, namely, *messing with clay*, *avoiding messing* (with clay) and *using anal words*, we find that they belong to responses which are less directly related to the evacuation process than are *lack of bowel control*, *spilling*, *smearing* and *avoiding use of toilet*. Finally, high dependency and low achievement striving children show greater frequency of anality on 80 per cent of the core items and on only 50 per cent of the peripheral items.

It becomes clear from our analysis and discussion that the core oral and anal items related more consistently in the hypothesized direction with dependency and achievement striving measures than did the peripheral items.

TABLE 12

PHI COEFFICIENTS OF ASSOCIATION AMONG NINE ANAL BEHAVIOR  
MANIFESTATIONS NOTED IN 49 CHILDREN RANGING IN  
AGE FROM 28 TO 74 MONTHS

<i>Anal Behavior Manifestations</i>	1	2	3	4	5	6	7	8
1. Lack of bowel control . . . . .								
2. Spilling . . . . .	.33†							
3. Smearing . . . . .	.25	.21						
4. Messing with clay, paint, etc. . . . .	.08	.00	.19					
5. Playing with water . . . . .	.08	.09	.29†	.50*				
6. Throwing food or objects . . . . .	.26	.57*	.17	.31†	.30†			
7. Avoiding messing . . . . .	.17	.09	.16	-.24	-.24	.06		
8. Avoiding use of toilet . . . . .	.18	.12	.00	.08	.08	.06	.17	
9. Using anal words . . . . .	-.00	.11	.25	.04	.12	.23	.09	-.10

\*  $p < .01$ . †  $p < .10$ .

SUMMARY

The present study was undertaken to investigate the relationships of dependency and autonomous achievement striving to orality and anality in early childhood. A conceptual framework was presented from which particular relationships between these variables could be expected.

The study was carried out on 51 middle and lower middle class children ranging from 28 to 74 months of age. The group included four pairs of twins. Most of these children were emotionally disturbed and all attended a therapeutic nursery.

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The data for the present study were collected over a period of 2½ years. Eleven teachers were trained to carry out repeated systematic ratings of dependency and autonomous achievement striving for all of the children in the study. Outstanding oral and anal behavior manifestations were obtained from a content analysis of annual and semiannual summaries by the nursery teachers on every one of the children. Reliabilities for all these measures were computed and reported.

We found that components of dependency on adults were highly inter-correlated in children. The same was found for components of autonomous achievement striving. One component, namely, *seeking recognition*, was consistently less related to the other dependency measures. *Trying to do routines by oneself* was consistently less related to the other components of autonomous achievement striving. The implications of each deviating component from its set were discussed with special emphasis on further research.

The relationships between dependency and autonomous achievement striving were low, whereas oral and anal behavior manifestations were significantly and positively correlated in children.

Dependency was positively related to orality. The relationships between dependency and anality were also positive but weak. Autonomous achievement striving was slightly inversely related to orality. The relationship between autonomous achievement striving and anality was more clearly in an inverse direction. Sex differences, severity of emotional disturbance and twinship affected considerably the above relationships. It was therefore concluded that such variables should be controlled in further research of these relationships in early childhood.

When dependency and autonomous achievement striving were inversely related, the association of each with orality and with anality increased greatly in predicted directions. It was concluded that conditions affecting relationship between dependency and autonomous achievement striving in children need to be further explored.

Detailed comparisons between high and low dependency and autonomous achievement striving groups on specific oral and anal behavior manifestations (a) confirmed our findings based on analyses of summated scores and (b) suggested additional assumptions in our conceptual framework.

An item analysis of oral and anal behavior manifestations yielded in both sets a core of items which correlated significantly with the total scores as well as with other items. These core items seem to be responses which are more directly involved in oral and anal drive reduction than peripheral items. Their relevance for learning studies was discussed. The oral core items seem particularly promising in supplying an empirical basis for further study in "object relations" and in the formation of character types suggested by psychoanalytic clinical experience. Both oral and anal core items showed consistently better relationships to dependency and autonomous achievement striving than did the more peripheral items.



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## LEVELS OF ASPIRATION IN PRESCHOOL CHILDREN

PAULINE SNEDDEN SEARS  
*Stanford University*

*and*

HARRY LEVIN<sup>1,2</sup>  
*Cornell University*

Early childhood is a time of learning a great number of skills, of attempting and practising a multitude of new tasks. In the course of normal development, most children progress at a moderately orderly rate from attempting and mastering first the more simple tasks and then the tasks having more taxing physical or mental requirements. The amount of striving, energy output, and the number of successes and failures experienced by the child during this period staggers the adult imagination. Furthermore, many, if not most, of the new activities tried by the baby and young child are in a very real sense self-chosen. The mother may place the child in a favorable setting for undertaking a new task, and she may try to entice him into new skills, but basically the choice of which tasks he will and will not undertake is the child's own.

There appear to be two kinds of motives for such choices, and for the tremendous amount of striving and sheer endeavor which go on during these early years. First, we can observe what seems to be an 'intrinsic curiosity about, and desire to master, the external environment. Woodworth (8) has called this the problem of mastery. Achievement of goals, such as walking upright, pulling up to a standing position, or placing a block in a cup, seem to be attended by satisfactions which likely derive from an enhanced view of the self as able to manipulate and control the environment. Young children often make mistakes in judging how much they can accomplish (relation of probability of achievement to ability), but, on

<sup>1</sup> Both authors formerly of Harvard Graduate School of Education, where this study was done. This study was reported in part at the 1955 meetings of the American Psychological Association in San Francisco.

<sup>2</sup> We wish to thank Eleanor Engleman, Carla Friedman, Judith Galinn, Barbara Kravitz, and Janet Zurier for their help with this study.

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the other hand, it is surprising how well they are able to calculate their endeavors in terms of probability of success at the moment. It is a reasonable postulate that the tasks which are self-chosen by the young child are those for which he perceives a good chance of success and also some instrumental gratification in terms of mastery or control over interesting parts of the environment.

A second component appears to be the social facilitation provided when other people observe and react to the child's performances. Approval or adulation from parents is a common reaction to the baby's first steps, and the child may also receive disapproval or punishment for his attempts at new tasks which the parent deems inappropriate for him. Some children become hesitant in reaction to many unfamiliar undertakings, while some appear deliberately to choose to try new tasks at very considerable levels of difficulty. It appears that through observation of the child's free choices of activities when varying degrees of difficulty are present, and of his effort in performance of the chosen activity, we have a good lead into an understanding of the beginnings of achievement motivation.

The level of aspiration technique has been widely employed as a method for study of such achievement-oriented behaviors. Ordinarily, subjects have been required to state verbally a goal or expectation for their future performance. Further, the subjects need to have at least a partial concept of levels of difficulty or a frame of reference for performance on the task. Tasks and techniques for studying aspirations of adults, and children older than eight years, have been rather widely used, but a standard method for study of younger children in this regard has not been so easy to discover. Two studies, those of Fales (3) and Anderson (1), have employed young children as subjects. Fales, who was interested in the developmental aspects of level of aspiration, observed "rudimentary aspirations" in two- and three-year-olds according to whether they accepted or refused help with putting on their wraps. Anderson used three-, five-, and eight-year-old subjects in a ring-throwing task. By various criteria, he found that "maturity" of level of aspiration, by adult standards, increased with age. Interestingly enough, he took the willingness of a subject to risk failure as an indication of a higher development of level of aspiration.

Neither of these studies employed a method which would permit observation and quantification of children's reactions to a variety of unfamiliar tasks. The problem is to develop a procedure in which young children's behavior in a variety of goal-striving situations is reasonably standardized as to forms of expression, is sufficiently explicit to be communicated to an observer, and is quantifiable to the extent that choices and performances can be compared from task to task and child to child. The present study has as its first purpose the development of such a procedure.

Secondly, a test was desired of certain predictions relative to modifiability of aspiration behavior under standard conditions, and of its consistency in individual subjects of preschool age. The child, after he chooses

the level of a task for which he will try, can react to the consequent success or failure (achievement or nonachievement of the chosen level) in one of three ways. He may (a) set a still higher goal, (b) choose a lower goal, or (c) maintain the same goal. Following success, responses (b) and (c) are the "safer" ones, that is, they will make future success more probable. After failure, only response (b) increases the likelihood of later success; the other responses put him in line for recurrent failure experiences, provided other factors in the performance sequence remain constant.

It is postulated that the child reacts to this performance situation with motivation deriving from the two types of motivation previously described: the first component of desire for mastery, which instigates levels of endeavor likely to ensure successful performance; and the second component, which provides individual variation in predominant choice of level, depending on the child's experiences in gaining approval or social facilitation for his performances. For example, goal-setting responses may be influenced by the parents' previous treatments of successes or failures, and by their pressures on the child for independence, achievement, or competitiveness. We would expect that the child who has experienced reward for trying new and more difficult activities would react by setting a more difficult goal after success and persisting at the same goal after failure. Gratification has here been attached to achievement at a difficult level; the "success" experience is probably contingent upon this. With fewer rewards of this nature in his experience, the child is freer to choose goals which ensure some achievement with less effort, that is, to operate at the easier levels of tasks.

In the test situations that will be described here, the levels of difficulty were defined for the child in terms of "how many other children can attain" each level, the most difficult being possible for "only a very few children." Thus, the frame of reference given to the subjects was the abilities of a similar group; this is similar to the procedure used by Anderson and Brandt (2) with fifth grade children. Presumably, this frame of reference should influence upward the goal-setting choices of those children who have in the past gained social approval by performing better than the average; children whose parents have not made such comparisons should avoid the difficult tasks on the practical ground that success is less probable at the higher levels.

Further, the attitude of the experimenter, a friendly adult who was constantly present in the situation, was expected to influence the behavior of the children. The attitude adopted for the present experiment was a warm and nonevaluative one; the experimenter's reaction to the child's choices was equally friendly no matter whether their choices were high or low. It was predicted that as the child had continuing experience with this permissive situation, the forces in him which act to inhibit maximum success through repeated goal choices at difficult levels should be relaxed, permitting goal choices which maximize success.

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In summary, it was hypothesized that (a) children will generally choose levels of difficulty so as to maximize achievement; (b) there will appear individual differences in the extent to which children elect to try for achievement at more difficult levels; (c) in an experimental situation in which social interaction with the experimenter is friendly and nonevaluative, it is expected that the child's original achievement pressures will gradually be relaxed so that he will be freer to choose tasks for which success is more likely.

## METHOD

There are certain requirements to the selection of tasks and procedures for use in connection with the level of aspiration technique (6). When four- and five-year-olds are to be the subjects, special problems arise in the meeting of these requirements. The tasks must be absorbing and challenging to the children, yet not be ones with which they have had a great deal of prior experience. At the same time, instructions must be simple, and the tasks not so strange that the children cannot comprehend them. Success and failure must be apparent at the conclusion of each performance, and should be perceived by a child as a direct result of his own behavior, rather than as being imposed by definition of the adult experimenter.<sup>3</sup> Finally, the concept of a graduated order of difficulty, in each task, must be learned and transferred from task to task.

To meet the latter requisite, each task in the present instance had five levels of difficulty and each level was given a characteristic color which was the same for every task; for example, the green colored materials were the easiest level of each separate task and red always the most difficult. In addition, the child indicated his choice of level by putting a peg in a peg board which was divided into colored sections representing the five levels of difficulty. The board was carried from task to task and was a common element attached to all the tasks.

The concept of a graduated series of difficulty with different colors standing for different difficulties was introduced to the children by way of a motor task involving large muscle activity: jumping to hit balls hung at varying heights. Here, the child could see, for example, that a red colored ball was the highest of the five colored balls and could "feel" that it was harder to jump for. Attempts to teach the child this concept on tasks having less immediately apparent difficulty gradations were not so successful.

### *Equipment*

Six tasks were devised, each task having five levels of difficulty. The levels were indicated by colors; green being the easiest, then yellow, brown,

<sup>3</sup> Success and failure in this study are defined as the achievement or nonachievement of the goal which the child has previously set for himself.

blue, and red, which was the hardest. The five levels of difficulty were marked by the same colors for each of the tasks.

*Task 1—Jumping for balls.* Five sponge rubber balls were suspended on strings from a rod hung from the ceiling. They hung in a line, three inches apart. The easiest to reach (green) was just within fingertip reach of the child, and each was hung about three inches higher than the preceding so that the red was the highest and most difficult for the child to reach. The over-all height of the series of balls was adjusted to children of differing heights by raising or lowering the board on which they were fastened. The child was asked to choose the color of the ball which he would try to hit on his jump.

*Task 2—Designs.* Designs painted on cards in the appropriate colors were copied by the children, using small triangular parquetry blocks. The blocks were also appropriately colored to represent the difficulty level. The intricacy of the designs increased with each level of difficulty. Several series of designs were used so that when a child repeated any given level of difficulty, he could be given another design of the same level and color. The children were given two minutes to complete the design.

*Task 3—Pulling weights.* Five sash weights, appropriately colored, rode in five vertical tracks ranged a few inches apart along a wall. The top of the track was seven feet above the floor, and the child had to pull the weight from its resting place on the floor to the top of the track by pulling on a rope which rode over a pulley at the top of the track. The weights, in order of difficulty, were approximately  $2\frac{1}{2}$ , 5, 10, 15 and 30 pounds. This was a very popular task.

*Task 4—Light up.* This is a commercial toy in which a page of designs with holes in the centers are mounted on a conductor plate so that when two appropriate holes are matched by inserting a metal stylus into each, a circuit is closed and a bulb lights up. The child's task was to find the design which matched the one in which the experimenter had inserted one stylus. The designs varied in difficulty from matching colors, to objects, simple geometric shapes, words, and finally, intricate designs. Each design sheet was appropriately colored, from the green, or easiest sheet, to red which was most difficult, and there were several in each series so that the child could repeat a color choice.

*Task 5—Broad jump.* Five squares were painted on the floor, green closest to the starting line and red farthest from it. The child had to reach the color of his choice by one jump from the starting line.

*Task 6—Remembering.* A number of small objects, such as a coin, light bulb, and miniature household objects, were concealed under each of five painted boxes. The child chose a box by naming the color and the experimenter lifted it. The child studied the objects until he announced that he was ready, and then the box was replaced. The child then tried to name the objects from memory. Levels of difficulty were varied by the number of objects under each box, starting with four objects under the

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green box and increasing by one for each color. Several series were necessary so that the child could repeat a level of difficulty.<sup>4</sup>

### *Procedure*

The child was taken into a room in which all of the tasks were laid out. During the first session the order of tasks was as given above. The experimenter, pointing to the first task, said, "Every game we play has some easy ones and some hard ones. The brown is middling hard. Some children can do it and some can't. Now the blue is harder. Not many children can do it. Red is hardest of all. Just a very few children can do it. Green is very easy. Yellow is next hardest but not as hard as the brown. Do you understand? I wonder which one you are going to choose."

After the child made a choice, he was given the peg board and instructed to insert a peg into the color corresponding to his choice. After the child's performance, the experimenter said, in a nonevaluative manner, "You chose yellow and you got (did not get) yellow. Which are you going to choose next? You can choose yellow again, or brown, or blue, or red, or green." The instructions about the levels of difficulty were repeated several times during each task until it was certain that the child understood the set-up. There were *six trials* in each task.

In the second session, a few days later, the child was permitted to choose his own order of tasks. The directions about the colors and the peg board were repeated, as in the first session.

The child's choices, whether he succeeded or failed, his comments and bodily tensions were recorded by a second observer from behind a one-way screen.

### *Subjects*

The subjects of this study were 19 four- and five-year-old children, 12 boys and 7 girls. The children were enrolled in the Harvard Preschool and came from middle-class, chiefly professional, families.

## RESULTS

### *Choices for Easy or Difficult Levels*

A major problem in working with children of this young age is to ascertain that they are indeed reacting to the experimental situation rather than in some fortuitous fashion. If they were behaving randomly, we

<sup>4</sup> It is our impression that the motor tasks (1, 3, 5 above) were more successful than the other three in involving the children and seeming meaningful to them. Task 2 (designs) did not completely fulfill our criterion that the outcome be apparent as resulting from the child himself, since it was a task timed by the experimenter. However, the children frequently looked at the watch wanting to know how much time was left, so we believe that they took the task seriously. The remembering task could be uncovered to show the children what objects he had forgotten. It appeared that the children, on the whole, were well motivated for all tasks.



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would expect their color choices to be the chance value (20 per cent) for each color. That this is not the case can be seen in Table 1. During the first session there are more easy and fewer difficult choices than might be expected by chance. The preponderance of easy choices is even more marked in the second session.

TABLE 1  
TOTAL CHOICES FOR EACH COLOR

	SESSION 1		SESSION 2		$\sigma_{diff}$	$t$	$r$
	N†	%	N†	%			
Green (Easy) . . . . .	177	27.95	237	35.42			
Yellow . . . . .	150	23.37	164	24.36			
Brown . . . . .	120	18.95	116	17.32			
Blue . . . . .	108	16.95	82	12.31			
Red (Hard) . . . . .	78	12.16	66	10.16			
Green & Yellow . . . . .	327	51.32	401	59.68	3.33	2.51**	.55**
Blue & Red . . . . .	186	29.11	148	22.47	2.54	2.59**	.49*

\*  $p < .05$ .

\*\*  $p < .01$ .

† Number of responses. The total possible number per session for all 19 subjects was 684. The total number of choices in this table is less than 684 since subjects occasionally refused to make all 36 choices required in a session.

*Shifts with Increasing Experience in the Situation*

The percentages of all choices which are green and yellow, that is, at the easier levels of the tasks; and blue and red, the more difficult levels, are presented in the last two rows of Table 1. In the second experimental session, there was a significant mean shift of color choices toward the easier end of the series, and correlatively, away from the more difficult levels. This finding is in keeping with the hypothesis that the children's choices will change in the direction of ensuring more frequent success, when the situation is one that is nonevaluative and without external pressures or rewards for achievement.

We also hypothesized that with increasing experience in this situation the behaviors after success would change so as to maximize attainment of goals. Table 2 gives the proportions of choices upward, downward, and at the same level after success; i.e., after the child has achieved his previously stated choice. In the second session, as compared to the first, there was a significantly greater proportion of successes which were followed by setting a lower goal or rechoosing the same goal. Correlatively, fewer successes in the second session were followed by setting of a higher goal, although in both sessions a higher choice after success was the most frequent response to reaching the previously set goal. In the first session the average number of successes (achievement of aspiration) was 70.89 per cent

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TABLE 2

RESPONSES AFTER SUCCESS (ACHIEVEMENT OF GOAL)

	SESSION 1		SESSION 2		$\sigma_{diff}$	$t$	$r$
	$N$	%†	$N$	%†			
Up .....	237	65.42	219	49.31	4.12	3.93**	.50*
Down .....	91	23.78	128	29.84	3.10	1.95*	.65**
Same .....	39	10.74	90	19.68	3.60	2.48**	.30
Successes .....	451	70.89	519	77.89	2.31	3.03**	.59**

\*  $p < .05$ .\*\*  $p < .01$ .

† Percentage of each type of response after success for each subject was calculated with the denominator equal to total number of successes minus the number of tasks whose final responses were successful.

of all the trials, and in the second session, 77.89 per cent, so the changes in goal setting after success actually did result in a greater number of goals being reached.

If the child's purpose, after continuing experience in the level of aspiration situation, is to set goals which he has a high probability of reaching, the most adaptive response to failure is to set a lower goal for the next trial. That this is the most common response to failure in both sessions is seen in Table 3. The session-to-session increase in the proportion of failures followed by setting of a lower goal was in the expected direction, although not statistically significant. Likewise, there was a nonsignificant decrease in the proportion of failures which were followed by the child's setting a still higher goal. The slight, though insignificant, increase in the second session in repeating a choice after failure was contrary to the hypothesis that the child will maximize successes. However, both repetition and going up after failure were rare responses.

TABLE 3

RESPONSES AFTER FAILURE

	SESSION 1		SESSION 2		$\sigma_{diff}$	$t$	$r$
	$N$	%†	$N$	%†			
Up .....	37	24.17	24	17.15	5.19	1.35	.25
Down .....	95	63.84	76	66.47	7.18	.37	-.07
Same .....	15	11.83	18	16.26	4.61	.96	.26
Failures .....	182	29.11	146	22.11	2.30	3.04**	.60**

\*\*  $p < .01$ .

† See footnote to Table 2.

Under what conditions will continued experience in a permissive and nonevaluative level of aspiration situation bring about a lowering in the goals set? Jucknat (5), for instance, found that the stronger the success (as judged by the experimenter) the more the subjects tended to increase their levels of aspiration. In the present situation, the external reward for reaching the stated goal was the same regardless of the level of the task at which the child was operating. The pressures to choose the more difficult absolute levels were intrinsic to the child rather than attached to adult approval offered by the experimenter. When these pressures could be relaxed through social interaction in this relatively permissive situation, the child was free to try for the "same" achievement at more likely levels. According to Anderson (1), the tendency for children to change their behavior so as not to risk failure might be interpreted as regression to a lower developmental level, i.e., less stability for possibly internalized parental values toward achievement.

### *Consistency of Aspiration*

A major focus of interest in level of aspiration studies has been the generality, or consistency, of the levels set. Heathers' (4) work has shown that the generality of the level of aspiration is a function of the similarity of conditions under which levels are set. In Tables 1, 2, 3 are reported the correlations between sessions 1 and 2 on color choices, responses to success, and responses to failure.

The children tended to be consistent from session to session in the proportion of easy and difficult tasks they chose ( $r$ 's of  $+ .55$  and  $+ .49$ ). Also, they were consistent in their responses after success as to the proportion of trials in which they went up or down ( $r$ 's of  $+ .50$  and  $+ .65$ ). The correlation between the percentage of trials following success in which they chose the same level in the two sessions is  $.30$ , which, though positive, is not significant. These four- and five-year-old subjects, then, tended to show consistent responses in the levels of difficulty (colors) which they chose, as well as in the nature of their choices following successful trials.

On the other hand, the subjects showed no consistent pattern of choices from session to session in their choices after failure. One reason for this may be a lower reliability of the failure scores that may have resulted from the fact that there were considerably fewer of them than of the success trials. Secondly, this may represent the common finding that behavior following punishment or failure is more variable than behavior following reward. Sears (7), for example, found that children who had a history of school failure had more widely variable discrepancy scores in level of aspiration situations than did children who had habitual success, and also that induced failure increased variability of aspiration scores.

It is interesting to note that, although the group means for color choices and responses following successful trials changed in a predictable fashion, the individual children tended to retain their relative positions

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within the group, as shown by the  $r$ 's. This represents a consistency in behavior over the two experimental sessions.

### SUMMARY AND CONCLUSIONS

Nineteen four- and five-year-old children were observed in two sessions of a level of aspiration situation. There were six separate tasks, each of which was graded into five levels of difficulty. The following findings emerged from this study:

1. Children of these ages were able in the first session to discriminate among the levels of difficulty and tended to choose the easier levels of the tasks, i.e., the levels at which success was more probable.

2. The choices of the levels of difficulty and the choices following success changed in the second session in the direction of ensuring more frequent success.

3. The children tended to be individually consistent from session to session in proportion of choices at given levels of difficulty and in their reactions to successful achievement at the level chosen.

4. There were no consistent patterns of responses following failure to achieve a previously set goal.

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## THE ROLE OF PRESCHOOL PLAYMATES—A SITUATIONAL APPROACH

ELEANOR STOKER BOLL

*William T. Carter Foundation for Child Development  
University of Pennsylvania*

The major emphasis in studies of child development has been upon early family environment. Lately, there has been an increasing interest in the role of school situations in a child's continuing personality growth and behavior patterns. Organized preschool groups, such as nursery schools and kindergartens, have also received some attention. There has, however, been an almost complete ignoring of the fact that the average child spends a considerable part of his time after infancy and before entering school with his playmates—ordinarily drawn from whomever is available to him in close proximity to his own home.

In the informal play group, most children have their first opportunity to mingle with their own age-peers in a relatively unsupervised manner. The play group is a social situation and has, as does any other group, its own specific structure, interactive process and cultural content. The plasticity of the young child, so much stressed in the study of early family influences, still exists during the years of preschool play. It seems rather obvious, then, that the play group must have some importance in directing a child's development and behavior, and that knowledge of the unique nature of a particular group in relation to that of the particular family from which a child comes may throw some light on understanding that child. This study is devoted to an attempt to discover some possible effects of the play group situation upon child development.

### METHODOLOGY

Detailed case records of 50 persons ranging in age from 18 to 54 form the source materials for this analysis. Most of them were in their teens or early twenties. Thirty-four of the cases were female and 16 were male.

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Both whites and Negroes were represented. Social status was predominantly middle class, with a few cases of upper and upper-lower included. The persons were asked to describe their family structure, interaction and culture during preschool days; the structure, interaction and culture of their play group; and their own opinions as to how the combination of the two had affected them, if at all. The foregoing terms were explained carefully to all those participating. Every effort was made to effect informal and clear communication between researcher and cases. In the analysis of the data, more reliance was placed upon the stated facts than in the interpretations, though in most cases the interpretations seemed to follow very logically from the situations as they were described.

### FAMILY AND PLAY GROUP STRUCTURE

One of the hypotheses on which this study was based was that the relationships between (a) numbers of siblings and numbers of playmates, and (b) sex of siblings and sex of playmates, might have a bearing upon socialization, sex identification, and ability to understand members of the same, or opposite, sex.

#### *The Factor of Size*

Table I shows the composition of our sample in respect to number of siblings, and indicates that the cases are very predominantly members of the small family system. Ninety per cent of the respondents come from families with three children or less. Census data for 1950 show the corresponding figure for the general population to be 79.3 per cent. The fact that our sample is a college-attending group very probably accounts for the higher ratio. It is clear, then, that the following analyses are descriptive, chiefly, of the role of the preschool play group for children in the small family system.

TABLE I  
FAMILY SIZE

<i>Number of Siblings</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
0 .....	7	11	18
1 .....	7	12	19
2 .....	1	7	8
3 .....	0	1	1
4 .....	1	1	2
5 .....	0	1	1
6 .....	0	1	1
Total .....	16	34	50

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TABLE 2  
SIZE OF PLAY GROUP OF ONLY CHILDREN

<i>Number of Playmates</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
1 .....	0	1	1
2 .....	1	1	2
3 .....	2	2	4
4 .....	0	0	0
5 .....	0	1	1
6 .....	0	3	3
7 .....	1	0	1
8 .....	0	0	0
9 .....	2	0	2
10 .....	1	0	1
"a group" .....	0	3	3
Total .....	7	11	18

Because the cases who had no siblings at all most strikingly illustrate the relationship between number of siblings and number of playmates, their situations will be considered below. In Table 2, the size of their play groups is tabulated. It indicates a wide numerical range and suggests many varieties of resulting situations, a few of which follow.

Jack, an only child, lived in a neighborhood composed mostly of foundry workers of foreign extraction, though his own family was not of this group. He was not permitted to associate with the children of the workers and when he ran off to do so on several occasions, he was brought home and spanked. There was just one approved playmate within his distance of free locomotion—a girl a year older than he. He admitted that he did not much care to play with her and felt she did not care to play with him, but she was the only available person. His one other playmate was the son of friends of his parents, three years older than he, who lived on the other side of town. Everytime they played together they had to be taken and brought home by parents. This was unsatisfactory, as was the difference in their ages.

Another only child, Bill, lived in a neighborhood which consisted almost wholly of young family people and of college educated parents. Most of the fathers were professional men, the major portion being college and high school teachers. There was a great deal of socializing amongst the parents who had many common interests. Quite naturally, their children grew up together. This boy had no difficulty in finding a continuous play group, easily accessible, from among nine children of both sexes and within one year of his own age.

Horace, a little Negro boy, whose father died when the child was four years old, moved at that time from his home where there had been no playmates available, to live with his mother who was 23; an aunt, 33; and two boarders (a married couple), 24 and 27. Formerly, he had been pampered as an only child and was the center of his parents' attention. With the move, he became the lone child "against" four adults, three of whom "took authority" because his mother taught school during the day. He wrote: "Limitations and frustrations

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began to pile up." He was aware that this could have been a very unhappy situation for him. However, the new neighborhood, by its constitution, enabled this lad to have a supremely happy preschool existence. The community was white middle-class, with just five Negro families of college-educated backgrounds and good economic status. There was no race conflict whatsoever, but a mutual agreement not to mix socially. The five Negro families had a total of 10 children within three years in age of the boy. Their social segregation made them stick together almost clannishly. The boy's need to get out from under adult domination made this group of children exceedingly important to him. He spent most of his day out "with the other kids, learning how to get along with other people." One cannot help but add here how much difference it could have made to the boy had there been no other children of his own race, age and class status available to take a hand in his preschool development of behavior patterns and conceptions of himself as a person.

In three cases of only children, there were other children living in the family. In one, a girl's male cousin one year older than she; in another, a girl's two male cousins, one and three years younger; and in the third, a boy's two cousins, a male cousin four years older and a female cousin three years younger. In the first two of these cases, the roles of the cousins were more like those of real siblings, with the result that there was no feeling of being an only child. Playmates were found together and shared together and there were a number of both sexes. In the third case, the boy was very conscious of being an only child. There was decided rivalry between him and his older boy cousin, because the older boy was permitted to "do things first," and yet was not the real son of the household. The little girl cousin was just a baby and of no use as a playmate. In this case, there was no joining of forces. The lad had to make his own associations, with the result that he found one girl, his own age, to whom he referred as his "sweet-heart" and two boys of the same age who never seemed like "real people" to him and of whom he no longer has any distinct recollection.

It was not just the only children who attributed their ease, or lack, of early socialization to the presence or absence of neighborhood playmates. The same sort of comment was made frequently in larger families in cases where the siblings were widely separated in age and/or of different sexes. Here, too, they directly related their own withdrawnness to an isolation from age peers, or spoke with gratitude of the playmates who reversed this tendency in them.

TABLE 3  
SEX COMPOSITION OF TWO-CHILD FAMILIES

<i>Sex of Siblings</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
Same Sex .....	3	3	6
Opposite Sex .....	4	9	13
Total .....	7	12	19



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TABLE 4

## SEX COMPOSITION OF THREE-CHILD FAMILIES

<i>Sex of Siblings</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
Both Male .....	1	1	2
Both Female .....	0	2	2
Both Sexes .....	0	4	4
Total .....	1	7	8

*The Sex Factor*

The sex composition of the two- and three-child families is shown in Tables 3 and 4, and they indicate that 63 per cent of those children were reared with siblings of the opposite sex. All of the larger families in the sample included children of both sexes.

Table 5 shows the sex composition of the play groups. Sixty-two per cent of them included children of both sexes, a percentage remarkably close to that for the family sex composition.

TABLE 5

## SEX COMPOSITION OF PLAY GROUP

<i>Sex of Playmates</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
Both Sexes .....	12	19	31
Opposite Sex Only .....	0	4	4
Same Sex Only .....	2	9	11
No Playmates .....	2	2	4
Total .....	16	34	50

Careful analysis of the nine cases in which siblings were all of the same sex revealed that in six of them the preschool play group afforded first association with children of the opposite sex, and three had no such associations before they entered school. A few comments from the individuals involved throw some light on the meaning, to them, of these structures in their interrelationships.

Ours was a very feminine household, and Mother was dedicated to making little ladies out of us. My older sister and I were even sent to private girls' academies until high school age. My sister had never played with anyone but girls up to that time and when, at the age of 14½, she started at a coeducational school, she got into various sorts of troubles. She was fascinated by suddenly being surrounded by boys who were quite ready to date her. But she didn't know

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anything about boys, really, nor their rules of the game, nor how to behave with them. The results were that first she got a badly turned head, then she got into trouble with the principal and finally she got her heart broken. She was "off men" for several years. It was so different with me. I went to the same schools at the same ages but I grew up with a gang of boys and girls from the tender age of three. We were together constantly and a little bit of Mother's "femininity training" was rubbed off me even before I went to the academy. Since my friendships with these same playmates continued for many years, I hadn't the slightest trouble in changing to the high school. Boys were "old hat" to me. I had had *their* ideas about proper girls' behavior pounded into me thoroughly and I had also learned a good deal about *them*.

I was the third daughter born to a man who desperately wanted a son. As chance would have it, the only children on my street were a number of young boys. Thus, while other little girls, I suppose, were busy playing with dolls or cut-outs, I was out in the street tossing a soft-ball or climbing lamp posts. The boys accepted me as one of them and I was happy. The "rub" came when I entered grammar school and found myself face-to-face with the problem of learning, under social pressure, How to Act Like a Young Lady. This was indeed quite a problem. It seemed I had to learn, often by painful experience, the behavior patterns which were second nature to other girls. I had to learn what seemed at the time a whole new vocabulary, a whole new manner of dress, a whole new set of interests. It was not easy. I had to learn these things not only to fit in with the other girls, but I discovered, to my pain, that boys prefer tom-boy girls only up to a certain age.

A boy whose only brother was three and a half years younger than he, and who had only one, and a very close and continuing, male playmate, wrote of being "terrified" by being in a classroom with girls, that he never made friends of them and even at present is much more comfortable with men than with women. One sentence from his case record is of special interest. After describing the life-long association with his friend, he wrote, "We were more like brother and *sister*."

### *The Age Factor*

Another hypothesis, arrived at during the process of this study, was that the age structure of the play group is also meaningful in terms of child development. It has already been suggested that the fact of age composition of family and available playmates has some importance where siblings are spaced so far apart as to almost preclude common interests and that in some such cases playmates have proved a satisfactory substitute in sharing, competing, and teaching. There are, however, other facets of the significance of age composition.

First, it seems proper to emphasize that slight age differences between very young children seem much greater than they do between adults. It is a common experience that age gaps increasingly diminish in significance as one grows older. In the case of very young children the facts of maturation and muscular development and control add further highlights to age differences. Even four or six months, when one is three, can make a great difference in actual ability, let alone in interests and in what Mother permits

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one to do. And a year or two makes a whole world of difference. For these reasons, the age composition of the play group in itself has been noted as important in our records.

A lad with a sister three and half years older than he, and a group of eight playmates from seven to nine years older than he, wrote the following:

Being younger, and with sister more or less of a boss, I became a follower and a crybaby when I couldn't keep up with the older kids and when they made fun of me. I even developed stuttering but thanks to my mother who didn't sympathize with me, I got over it. She convinced me there was nothing organically wrong with me, that I could stop it if I wanted to. I did try hard and it worked (although under extremely tense situations I feel it coming back but I always suppress it). When my sister was in high school, my parents and she always insisted I go wherever my sister and her friends went (swimming, movies, to other girls' houses). I always felt out of place and not really wanted although everyone said I was very foolish to think such a thing.

A girl with a brother eight years older and a sister four and a half years younger tells this story:

The only children in the block were about six boys all exactly my brother's age. As a result there was no one for me to play with. But my brother's friends played with me, not regularly, but I was treated to bicycle rides, swings, etc., when they were in the mood. As a result . . . I never had a "till death us do part" bosom pal. I have a hard time talking to other people about things that are important. I enjoy being with myself. Reading is a favorite sport. And I sometimes wonder if the fact that I have always gotten along (on a dating basis) with fellows quite a bit older than I isn't caused by the earlier associations with my brother's friends.

Two other cases (not tabulated in this study) show interesting contrasts to the above. A young lady who is remarkably competent at everything she undertakes, and for the simple reason that she studies each new problem carefully and keeps practicing until she is satisfied with the results, had the following experience. She was the youngest of seven playmates, the next closest in age being six months older. Apparently, the greater motor abilities of the others challenged her. When she was just old enough to dress herself, she was found sneaking out into the yard one morning at six o'clock. When observed and questioned, her explanation was that she was going to "pwactice yumpin'." "Practicing jumping" has been characteristic of her behavior ever since. Finally, an extremely successful businessman, who has made his way by starting a number of times on jobs quite below his ability and economic value and then working himself upward, attributed his willingness to do this to attitudes formed in his earliest training. He had a sister five years his senior. The only other children in the neighborhood were girls of her age, and the little boy who tagged along was an abomination to them. He was very lonely and discovered that the only way he could "get in" was to offer to do the "dirty work" and "play the

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most menial roles." When he did this, he was not only accepted, but achieved success in his goal for companionship.

### FAMILY AND PLAY GROUP INTERACTIVE PROCESSES

In situational analysis the separation of a group into structure, process and content is a necessary technique but a highly superficial one. It is necessary because it is impossible by word of mouth or in writing to analyze a situation in its total configuration. It is superficial because structure, process and content are so completely interrelated that in a real life situation no one of them stands alone as a determining influence. Already, in the analysis of structure, there has been much reference to both interaction and cultural content. This is inescapable. However, as structure has been the chief emphasis in the preceding section, and content will be in the following one, so interaction is stressed here. Three aspects of it will be illustrated.

#### *The Play Group Interactive Pattern*

The general patterns of play group interaction in our case records provided interesting contrasts. There were the very congenial ones in which even the parents sometimes helpfully participated when they were required, in which statuses and roles were clearly defined and agreeable to all the children, so that little or no friction resulted in the groups even during competitive play. "We all got along swell" is the tone of comments about such groups. At the other extreme were the play groups that battled incessantly, sticking together, but with a continuous jockeying for statuses and roles. In the records of such groups, the usual comment is something like, "I learned how to stand up for myself. I had to." Between these two polar extremes there was many-shaded mixtures of such interaction. Furthermore, there was one other distinct type: the close-knit group that achieved its closeness from an effort to protect itself against, or take it out upon, a second close-knit neighborhood play group. Interestingly enough, the respondents, both male and female, who recorded this type of interaction spoke of their groups as "gangs." The process described within them was very similar to that described in Thrasher's (2) classic study of gangs, here, pushed back in time to preschool play.

#### *Individual Playmates and the Empathic Complex*

Many studies in child development which are psychologically or psycho-analytically oriented stress that early psychic experience in family interaction may result in patterning a child's behavior and attitudes toward all other people and throughout life. For example, the family-rejected child may feel rejected by everyone else and even when he becomes an adult. Such cases do occur, and frequently come to light in clinics. Thus, it is almost natural to attribute the results to family rejection. There are also, though, many obviously family-rejected children who do not react through-

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out life in this way. They do not usually show up in clinics (at least not for rejection symptoms) and it is therefore very difficult to discover why their reactions have been so different.

A sociological, or situational, analysis of the total interactive group experience, rather than of just early family interaction, may shed light on possible answers to this question and for the following reasons. For some people, the *realities* of their experiences throughout life correspond to, and reinforce, the influences of their intra-family experiences. For others, this is not so; and at times quite abrupt reversals of behavior and attitudes result from new experiences. Our case records give indications that this does happen.

One very persistent story running through the records has to do with the ability, or lack of ability, to form close intimate relationships with other people, to talk oneself out freely, to give confidences. In every case where a child had felt no such closeness with a family member, because of a variety of circumstances, and the play group offered no person of similar age and/or interests, the individual remarked upon a continuation of his "apartness" during school days and a lingering bit of difficulty in this respect up to the present. On the other hand, when the family situation was similar, but close pals had been found in the preschool period, the writer spoke of this as the beginning of learning to share himself with another.

The story, however, is broader than it appears on the basis of these comments. The author has used the concept of "the empathic complex" to describe one of the ways in which personalities take form. The term *empathic complex* means "the particular emotional linkage between a child and the significant persons in his environment" (1). A child does not respond to all the people in his environment with equal emotionality. Some, he loves because they fulfill his emotional and/or physical needs; others, he dislikes because they do not; still others seem neutral persons to him. Regardless of the actual social value of the behavior of these people, a child tends to react in two ways. First, he tends to adopt the behavior patterns of those he loves and to avoid those of the ones he dislikes; second, he tends to develop a certain type of behavior pattern of his own which is appropriate to the relationship between him and the specific person. He is selective about this in his own family, and our cases indicate that he is equally selective amongst his own playmates. For example:

George had a circle of little friends whom he saw most frequently at birthday parties and Sunday School. Most of them were "neutrals" to him and he rarely sought out their company. Jean, a girl one and a half years older than he, definitely appealed to him, however, and he spent most of his time with her. She was "likeable," came from a "nice middle class family of the same religious background," and "generally set a good example as to her character." Not only was she a "character example" to George, but he felt his association with her carried over into his later life. He prefers the kind of girl Jean was, now that he is at the dating age, and he thinks of girls as friends and not just as "mere objects of sexual attraction." George had a strong emotional feeling about one

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other playmate, Harry. Harry was six months older but a "coward and not too intelligent." His character was "a little shoddy," he always told his parents lies and seldom got away with it. Through Harry, George discovered that "crime does not pay," and he felt that Harry influenced him negatively almost as much as Jean did positively—not because of the actual moral values represented, but just because George happened to like the one very much and despise the other.

In Grace's play group, Mary Louise was her favorite friend. Mary Louise was a year younger, and Grace always felt that she was "taking care" of the younger girl. The relationship was so pleasant and happy for both that when Mary Louise had a baby sister, Grace extended her protective attitude to include the baby. Grace says that she loves young children, likes to work with them, and wants four of her own.

A very similar case record involves a girl whose closest friend was a cripple. They spent a very happy childhood together; the recorder never lost her interest in people with physical incapacities and became a nurse, specializing in orthopedics. This case was in striking contrast to the statement of still a third girl whose next-door neighbor was a victim of paralysis of the right arm. She wrote that she was forced to play with this boy and that his nasty disposition and vicious temper developed through frustration had made her steer very clear of anyone who had any kind of deformity.

### *Relation Between Family and Play Group Interaction*

Finally, the combination of interactive processes within the home and those encountered outside have their own specific effects.

Gloria writes that she was born when her parents were 39 and 41. Their first baby died at the age of three. They had long since given up any hopes of parenthood before Gloria arrived. When she did, she was the apple of her parents' and kinsfolk's eyes, and very severely overprotected. She describes herself as "sensitive, isolated and hesitant." The children in her neighborhood ran around in a "pack," and were boisterous and active. She wished so much for some one or few quiet children like herself to play with; but she could not become a member of the "pack" and she had no other resources than "imaginary playmates." She wrote, "Now that I have grown up, I realize the advantages of group play. Play is a great builder, not just of bodies and minds, but also of social awareness, for in play a child must take other children into consideration. He learns many valuable lessons in adjusting himself to the demands and ideals of his group as he will later have to adjust himself to the demands and ideals of his community."

Robert, an only child who lived on a large farm, contributed the following record:

I was quite lonely as a child, in fact, very lonely. My mother was not a talkative woman, and my father was a busy man. There were two groups of children available for me to play with and I was eager to play with them. One was a large family of about eight children. My parents did not think much of the family. The father was irregularly employed. One girl had had an illegitimate child. One boy had been in some kind of trouble. My mother thought they were trash but she also had insight into the loneliness of a little boy. In addition to the social barrier between us . . . I early had to face certain problems. They

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cheated at play. They depreciated my superior toys but used them often and broke them. When I got a tricycle, they wanted to ride it all the time but yet it was not a good tricycle. They knew people who had better ones. Also, I envied them. They were a large family. They had a good time, it seemed. There was always somebody to do something with. These children did some petty thieving . . . I remember much talk about it in our home. My father wanted to go to the mat with them, but my mother said she didn't want trouble with them since they were, after all, our nearest neighbors and were the only children usually available for me to play with. About this time, the boy two years older than me began picking on me. My father told me the next time it happened to punch him. I did. I struck him and piled him up on the mud. This made a tremendous and lasting impression on me. He was older, he was a head bigger, yet I learned that fight can overcome what seemed like insurmountable obstacles. I don't think I was ever afraid after that of anyone, at least not for many years. The other thing I remember. These older children gave me my first introduction to sex. The girls as well as the boys joined in. I worried about this for years. The other children that I played with—and always separately from the first family—were my two cousins, a girl and a boy. The girl was a few months younger than I and the boy about a year and a half. The girl and I have always hit it off well together and we ganged up just a bit on the boy. We made him sort of fetch and carry for us. She and I always sort of understood each other and respected each other. Our parents liked each other and there were many happy days when her mother and she came to stay at our house. Then, she and I, and sometimes the boy cousin, ranged all over the place and the fields and played nicely and happily together. The psychoanalysts might well find in my happy play hours with her the development of a deep-seated need which it took many years to fill again. I think that my dual conception of women came from this far back. At six, I was fully aware that there were two kinds, with two different statuses.

### CULTURE OF FAMILY AND PLAY GROUP

Two different aspects of the cultural content of family and play group seemed to affect significantly the writers of our case records. One was the similarity or dissimilarity of family culture and play group culture, so far as nativity, religion, race and socio-economic status were concerned. The other was the actual content of play activities within the play groups themselves. This section will be devoted to a brief consideration of each.

#### *The Relationships Between Family Culture and Play Group Culture*

Three patterns emerged in the reports on group cultures.

One was that of a child living in a very homogeneous neighborhood in which the values, attitudes, interests and general way of life of all the families coincided. The children attended the same school and, with their parents, the same church. Family, school and church all reinforced each other in the acculturation of the children and in the same manner. It almost goes without saying that the content of the play group was a close reflection of uni-cultural upbringing. There was, of course, some conflict between family and play group, based on "misbehavior" as interpreted by parents. There was little resentment against parents because of this, however, since the children all *knew* what was the approved way to behave and play. They



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broke the rules sometimes, and they expected to be punished for it. As adults, they commented on "the comfort of cultural consistency," "We always knew where we stood, what we shouldn't do, and what would happen if we did. There was no confusion in our minds." "It was not as if we were children *against* parents or children *against* each other. We all pulled together, amicably, and once in a while us kids would have a spat or decide to kick over the traces." The case of Bill, cited earlier, is an excellent illustration of such a pattern. The whole neighborhood was young, family-minded, social, college-oriented, of similar socio-economic status. Bill, as a college student, still has as his closest friends some of his preschool playmates. Two are classmates at the same university. One is to be best man at his wedding after graduation. Bill is a conscientious, relaxed, self-assured young man, who says, in his own words, that he believes something about the continuities in his group experiences has resulted in making him comfortable and happy.

A second pattern was that in which the neighborhood was culturally divided into at least two distinct groups. Here, the children were "told" with whom they could and could not play. Sometimes they were told by their own parents; at other times, they were rejected by the parents of the children with whom they wanted to play; and again, by those children themselves. The meaning of these divisions to children seemed to depend upon the specific group to which they belonged (high or low status, and majority or minority group) and the availability of playmates whom they liked within their own group. Striking contrasts appeared. Horace, for instance (the little Negro boy who was mentioned formerly), was of minority group status in a sharply divided neighborhood; but he had his own social resources and cultural homogeneity within his own group. Now that he attends a university that is of heterogeneous make-up and liberal attitude, Horace preserves his social separatism of his own accord, with no resentment, and with self-confidence. A Catholic girl, however, who was the only child of her faith and age in a neighborhood divided between Catholics and strong anti-Catholics did not have such a relatively easy adjustment. Under pressure of their parents, the other children rejected her from their play group. She was alone and lonely until her parents finally sent her to a parochial school. There, she found that though her religion was accepted, her person was not. She did not know how to get along with children—only with adults. She favored the Sisters and the Sisters favored her. This strengthened the notion of the other students that she was a "square." She relates that it took her years to find friends of her own age and to get over her hatred of Protestants. Then, there was also the girl, in a divided neighborhood, who was a member of the minority group. This group, however, was superior in socio-economic and educational status to the majority group. Her parents would not let her play with the children in the latter group; but the children in her own seemed "stuffy and cold" to her. She was intrigued by the adventuresome play of the others and was determined



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to avail herself of it whenever possible. This resulted in constant intra-family conflict and, during adolescence especially, a very rebellious girl. She is attracted only by peers of whom her parents do not approve and is happy to be living away from home so that she can "get out from under."

The third pattern existed in "neighborhoods" which should not accurately be called by that name. They were found chiefly in urban areas of dense population whose make-up was so heterogeneous that there were few, sometimes no, cultural ties between the individual families. It was as if each family lived on its own cultural island. The play groups consisted of some rather exotic cultural combinations. Parents exerted little or no pressure. The children sorted themselves out. It was under such circumstances that the aforementioned "gangs" emerged even in preschool years. They ranged from the gangs that played tricks on each other, through the ones that vied for play localities and equipment, to several gangs that were surprisingly rough and vicious for children so young. It was in these situations that writers commented variously; "I learned that you had to be rough to make your own way," "It didn't pay to be alone, you needed some pal with you," "I think my fear of tough people stems from those gangs. I always avoid anyone who looks tough," and "My feeling has always been that if you aren't sharp you'll be outsmarted."

#### *Activities Within the Play Group*

All of life is a learning process in which each new experience adds to the individual's cultural acquisitions. This is a selective process, however, and each individual learns only certain specific elements, or levels, of the wealth of cultural accumulations in his society. The specific selection is limited by the actual life experience of each person. In the family, the child learns his own family's version of the culture. In the play group, he is immersed in the content of children's activities.

Children's play is a direct reflection of the behavior and knowledge of the adult society. In a simple society, such as a fishing or agricultural tribe, one can fairly easily predict the forms that play will take—there are so few roles, behavior patterns, and forms of activity. In a complex society, this is not so; and the learning process, through play, is much more varied.

This proved to be so with our cases. In group activities the children learned very different modes of behavior during their preschool years. The variations were so many that only a few are selected to illustrate some points on the gamut.

Andy, the five-year-old son of an urban minister, was set upon by the local "gang"—first and second grade boys. They had thought the "minister's kid" would be an easy mark. Andy, however, was wirey and strong, fought back and took his beating bravely. Instead of becoming a scapegoat, he achieved high status among this band of youngsters whose sole activity was composed of devising ways to throw stones at automobiles and through windows without getting caught. Aided by an older gang, some members of which had already become

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acquainted with the Juvenile Court, the play group taught the minister's son a great deal about the law and its evasion, and the excitement of "getting away with it." Andy says that he is the "black sheep" of his family. In school, he perpetually got into trouble for cheating. He said, "I knew it was wrong, but it's like a game and I get away with it more often than not. Even in college, I was up before the executive committee; but they don't do much to a minister's son."

In contrast:

Bill, who lived in an education-minded community, reported that most of his preschool play was "intellectual in nature." All the parents stimulated all the children, educationally. In their play, they taught each other the ABC's; how to count; the fundamentals of reading and spelling. When this group started to school together, they were well advanced over the rest of the students. They were soon set apart as the leading student group—academically speaking. They remained so through elementary and secondary school. Bill recognized, as time went on, that he was not exactly a brilliant student. The work became increasingly hard for him. He applied himself very conscientiously, however, because he could not lose his status nor let his clique down. At present, with two members of his preschool group still in his own class, he is devoting all his energies to making "at least a B average," and is quite confident that he can do it.

One girl writes:

I spent all my days, before I went to school, playing house with my friends. We had dolls, and paper-dolls, and kittens and puppies for the babies. We had all kinds of tiny housekeeping equipment—even a real electric stove on which we cooked real food, and a little hand sewing machine with which we made clothes for our dolls. We bathed our babies, took them for walks in their coaches, fed them (I had a hollow doll that had to be broken open once to remove the decayed food!), and I nursed them when they were sick.

And finally, another girl describes her preschool play in this way:

We did *everything*. We went "bird watching" in the woods and on nature hunts and we drew what we had seen and collected specimens in albums. We gave our own little Block parties, and sold lemonade in hot weather. We grew plants in egg shells, and in the winter we sledged, built snowmen, and knitted little wool squares for blankets for the Red Cross. We even tried to sell War Bonds, but we weren't very successful at that.

## ADDED OBSERVATIONS

Up to this point, this study has attempted to describe some of the general aspects of child development as influenced by the structure, process and content of the preschool play group situation. It seems pertinent to comment further on two observations made during analysis of the materials.

### *School Adjustment*

Without having been asked to report on school adjustment, 36 out of the 50 cases did so. To them, their school adjustment clearly related to absence or presence of a play group and to the make-up and content of it.

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Since this has already been suggested in excerpts from case records, a very brief summary of what they reported will suffice here.

1. When the respondent was older than his playmates and the leader of them, and had only younger siblings, he had to cope with the problem of his "bossiness" in social relations at school.

2. When he was the baby of his play group, and was babied at home, his problems were those of establishing relations of equality among his age peers at school and of not being overly-dependent upon classmates and teachers.

3. The child who had played, in family and neighborhood group, only with children of his own sex found some difficulties in adjusting to school-mates of the opposite sex.

4. In the case of a child without siblings or playmates, entering a classroom with a number of other children was, usually, "terrifying."

5. The child who was used to playing with others of his own age and of both sexes found the transition to the classroom to be quite easy, as a rule.

6. Finally, the activity-content of the play group, as it prepared the child, or did not prepare him, for participation in school-learning, affected his interest, his status and his adjustment in the school situation.

#### *Changes in Preschool Play Group*

Twelve of our cases changed their play group situations with a change of residence during their preschool days. These cases gave added conviction of the meaning of such groups to young children, for all of them mentioned the change as a real life crisis.

In seven of the cases, the move was a great relief. There had been no playmates available, or only wholly unsuitable ones. Here, the move was spoken of as the beginning of better times or better adjustment. In four cases, the writers thought that their parents had made the move with this specific purpose in mind.

The other five cases were not so fortunate. They were "torn up by the roots" from their best friends and constant companions, to find loneliness, bad influences, or, at best, very poor substitutes for what they once had. All five of these mentioned that they could not find satisfactory associations until some time after they started school and got into some kind of amiable group once more.

#### CONCLUDING COMMENT

This study is presented for its possible suggestive value. The cases concerned are too few to attempt definite conclusions. The thesis is that childhood experience in preschool play groups, though it has been neglected as a field of study, is of real significance in the development of the per-

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sonality and behavior patterns and that it therefore deserves attention by students of human behavior. The material presented here is one kind of data that may be used for such a purpose.

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## THE PARENT-CHILD RELATION AS A SOCIAL SYSTEM: I. PARENT AND CHILD ROLES<sup>1</sup>

ORVILLE G. BRIM, JR.

*Russell Sage Foundation*

This is the first of a series of papers in which we present an analysis of the parent-child relation from the viewpoint of current role theory and social system theory in the behavior sciences. This approach to interpersonal relations poses a series of questions which are general in nature and which we attempt to investigate specifically in the area of parent-child interaction. The questions about the parent-child relation which we plan to consider are the following: parent and child roles; deviance and control in role performance; effects of participation in other systems; and consistency in role performance.

Previous discussions of the parent-child relation using frames of reference similar to our own include sections in Burgess and Locke (13), Davis (20), Waller and Hill (77), Parsons (47) and studies by Bossard (10, 11). Although we are heavily indebted to this previous work, especially Parsons', it frequently has not been as detailed as one might hope; and that which has been detailed, such as Parsons' analysis, has not utilized available research data in connection with the analysis. In our own study we hope to extend and develop some of the insights presented in these earlier studies.

Our analysis has a two-fold purpose. First, we attempt to restate some of the fundamental issues in parent-child relations in terms of concepts and analytic categories drawn from role theory and social system theory. Secondly, we attempt to relate these concepts and analytic categories to existing research on parent-child relations, both by citing the research when pertinent, and by classifying selected portions of existing research in terms of such concepts and categories.

Two limitations on the extent of our analysis must be made explicit. The first is that we are not concerned with the effects upon the child's or the parent's personality of membership in the parent-child system. Much of the research data which we mention in this analysis, particularly with respect to parent and child roles, is drawn from studies which had as their primary concern the personality of the child resulting from certain types

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of parent-child relations. From such studies we use the information describing the relation, but not the data on effects of the relation.

Secondly, throughout our analysis we are concerned only with the parent-child relation in the United States. We have not included materials from other societies except where they are crucial in illuminating some point of theory. This fact makes it difficult to determine the limits of generality of the analysis. While some of the statements which follow may be true of American families generally, or even of broader groups than this, others may pertain only to specific subcultural groups. Unfortunately, knowledge of this area at the present time is not sufficient to permit clear-cut statements of degree of generality. As a result, we have sought to avoid generalizing unwittingly beyond the limitations of the sample from which the research findings come.

In the analysis that follows we consider the parent-child relation to be a social system in the sense that two individuals interact with each other on the basis of common expectations about appropriate behavior both for themselves and for the other person (47, p. 204).

For every social system, such as the parent-child system, there is some function which is performed for the society at large. Some social systems differ from others in that their primary function for society is training society's members. These include the teacher-pupil, the master-apprentice, and, of course, the parent-child system. In the latter the broad and dominant function is the physical care and training of the child so that he becomes a socially suitable member of society, both as a child in the child's role, and later as an adult performing an adult role. The important distinction between such systems and others is that their major function is to produce, if you will, certain kinds of behavior and attitudes in the member of the system who is being trained. In this type of system it is behavior and attitudes that are the product rather than some type of goods or services.

Surely there are other functions of this particular system for society, but remarkably little analysis has been presented of the functions of the parent-child relation beyond intensive treatment of the dominant function mentioned above. Others have been mentioned, however. For example, it has recently been suggested by Parsons (48) that this relation may provide the opportunity for the adult to work out through play with his children latent conflicts of his own childhood. It has been suggested frequently that involvement in a parent-child relation, i.e., having children, serves to maintain the husband-wife system intact. However, the recent work of Monahan (45) indicates that there may be little relation between childlessness and divorce. For our purposes throughout the analysis we work primarily from the point of view of the dominant function, namely, the rearing of children to produce competent adult members of society.

The basic element in social system analysis is the role of the various members of the system. In every system, each of the members has a certain role which he is expected to perform. Generally, the roles in the system

are such that they are complementary to each other, and when competently performed lead to successful discharge of the functions of the system for the larger society. Generally, too, the members have been equipped through prior or in-service training for the proper performance of their roles.

In the analysis of roles, whether for the purposes of research, of making predictions of role effects, of seeking improvement in role performance, and the like, there are several issues which the investigator should consider. Some of these issues would seem to pertain to analysis of roles in any social system. e.g., husband-wife roles, physician-patient roles, while others may be relevant only to the parent-child system. These issues, which we take up in order, are: prescriptive and performance aspects of roles; units of causal sequence used in role analysis; descriptive properties of roles used in analysis; specificity of the role; changes in roles; and, sources of information about roles.

#### PREScriptive AND PERFORMANCE ASPECTS OF ROLES

Every role involved in a social system, like the husband role in the husband-wife system, has some specific duties within the system, some responsibilities to discharge. The content of the role, that is, the feelings one should have, the behavior he should perform, the effects he should produce, are customarily prescribed by society's members for the incumbent of the role. These prescriptions are normative, in that they state what is good or appropriate behavior for a person occupying a certain role in a certain system.

Role prescriptions must be distinguished from descriptions of actual role performance of members of a system. The uses of prescriptive or actual performance information about a role constitute two different ways of defining or describing a given role. Analyses of parental roles, for example, may involve information about how parents actually behave, such as reports by mothers of their infant training practices (61), or information about how parents should behave, such as fathers' prescriptions for their own role (22). Where role data has been used as the predictive variable in studies of children's personality, one finds the investigator customarily using one or the other kind of data, i.e., prescriptive (27) or actual performance data (60). The relative value of using one or the other kind of data in prediction apparently has yet to be established. In any case, the distinction has been sufficiently clear in role analysis so that it probably needs no elaboration.

Two points about role prescriptions, however, merit discussion. First, we would point out that prescriptions for roles in any social system are directed to the successful discharge of the function of that system for society. Role prescriptions essentially are efforts on the part of society's members to regulate the behavior of certain of the members so that certain consequences will occur. It may be clear, then, that role prescriptions are based on



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theories, implicit or explicit, about human behavior. Role prescriptions include the behavior believed in the society to be the instrumental means to the achievement of some desired result, i.e., the given function of the system. Thus, the parent in our society is charged with the responsibility of behaving towards the child in a way which *it is believed* will result in the child's becoming a competent functioning member of society when adult.

It follows that changes in role prescriptions will occur either when the theory of human nature which underlies the prescriptions changes, or when there is a change in the functions ascribed to the system. Changes in prescriptions resulting from changes in theory are perhaps most clearly shown in analyses (69, 76) of prescriptions for the parental role found in the parent education literature, e.g., the shift from a Watsonian to a Freudian conception of personality contributed to the shift from rigid to self-demand feeding. However, the society generally, not only the expert advisors of parents, also shifts in the general theories. For example, (73), during the first part of the nineteenth century and earlier, the Calvinist view of human nature with its conception of infant damnation and inherent juvenile depravity led to prescriptions for the parental role involving breaking the child's will, among other items. This prescription generally disappeared with the decline of Calvinist theory.

Changes in prescriptions resulting from changes in ascribed function occur because the latter constitutes setting a new goal, so to speak, so that now new means (e.g., new child-rearing practices) are required to reach the new goal. The changes in function of the parent-child system occur within the broad framework of producing competent adults; it is not this over-all charge to the system which changes, but rather the details of what constitutes adult adequacy, i.e., the conceptions of the competent adult. This type of change in relation to changing parent-child role prescriptions evidently has been little studied. Inkeles (30) has analyzed just this type of change for the past two generations in Russia, but for the United States the several analyses of changing conceptions of the valued adult character (55) have not tied the change to changes in the parent-child system. Historical reviews such as Anderson's (2) and Bossard's (11), as well as the references cited in the latter, are generally illuminating but not incisive on this point.

It follows also that conflict in role prescriptions between different groups stems from either different theories of human behavior, or different conceptions of the competent adult to be produced from the parent-child system. So far as we know, differences in role prescriptions between different sub-cultural groups, between mother and father, or parent and child, have not been examined as to whether the differences arise from different theories of how to reach the same end, or different ends, or some mixture of both. This seems to us a provocative line of investigation. There is some indication (50, pp. 201-203) that conflict in prescriptions between various



special interest groups, such as the preventive mental health movement, and the society at large arise from differing conceptions of competence in adulthood. Where the general prescriptions for the parent and child roles are tuned to the production of persons competent to perform in the society *as it exists*, requiring perhaps a moderate amount of anxiety, high achievement drive, etc., the prescriptions of special interest groups may be unrealistic in the sense that they are directed not to the existing society's demands. This is not to imply, of course, that society's conceptions of the good adult are better nor that the conceptions of special groups ineffectual. Indeed, it is in part through just such special conceptions and their pursuit that society does change.

A second important issue pertaining to role prescriptions is that of reciprocity. We have mentioned that roles in a social system are mutually cooperative and facilitative in the achievement of the function with which the system is charged. This requires that when a role in the system has some specific prescription, other roles in the system will carry a reciprocal prescription such that the performance of the latter will fit performance of the former. Thus a prescription for a given role, e.g., that parents should make their children obey, conveys at the same time the reciprocal prescription for the child's role, viz.: that children should be obedient. Thus, what is prescribed is truly the relation between roles in the system, even though in statements of prescriptions only one-half is made explicit and is linked to one specific role, while the reciprocal half remains implicit.

Generally, the members of a system know not only the prescriptions for their own roles, but at the same time know the implicit reciprocal prescription for the others' roles. These reciprocals, in fact, constitute some of their role prescriptions for other members of the system. This does *not* necessarily mean that the other members accept these reciprocals as role prescriptions for themselves. Conflict and instability in the system may have resulted in disagreement between members as to appropriate role behavior. What *is* true is that any given member will generally prescribe for others the reciprocal of the prescriptions he holds for his own role. Whether these reciprocals are in fact the prescriptions the other members accept as valid and correct depends on the amount of disagreement between members. Thus, to use our earlier example, a mother may believe she should make her children obey, and reciprocally, that children should be obedient. Whether the children accept such prescription for their own role is another question; they may believe that children should not obey, and reciprocally, that mothers should not make them obey.

In research on parent and child roles the assumption of reciprocity helps to extend our knowledge. For example, in a national survey by Hackett (26) of adolescent prescriptions for parents' behavior, the adolescent response that a parent should not necessarily always give reasons for his demands on the child implies that the adolescent should at times be willing to accept such demands without explanatory reasons. Thus, we have

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information not only on parental role prescriptions for the adolescents, but reciprocally, information also on prescriptions for the adolescent role itself. The procedure could just as easily be reversed; that is, one might have asked the questions about adolescent roles and inferred the parental roles.

Several studies seem to have made use of the assumption of reciprocity without having made it explicit. For example, in research directed to mothers' "attitudes toward child rearing" (e.g., 27, 35), attitude scales have been used which ask the mother for prescriptions both for parents' and for children's roles, e.g., a parent should . . . , a child should . . . . The items pertaining to the parents and children are not direct reciprocals of each other. Rather, they involve different types of behavior. It is probable that a mother's prescriptions for how a child should behave are as accurate an indicator, given the assumption of reciprocity, of how she feels a parent should behave, as are direct statements about how she feels parents should behave. There is no basis for believing otherwise at the present, and we make this point only to indicate the difference in these two approaches to role prescription data, and the fact that only on the assumption of reciprocity can these two types of items be included in the same measure designed to assess maternal attitudes.

Finally, we will note that reciprocity permits no inferences about actual role performance. The fact that a mother tries to make her children obey is no guarantee that they in fact obey, or even that the mother really expects them to obey—even though she meanwhile believes that she *should* try, and that they *should* obey.

### UNITS OF CAUSAL SEQUENCE USED IN ROLE ANALYSIS

We have pointed out how the prescriptions for roles in a social system are based on theories relating the prescribed behavior to discharge of the function ascribed to the system. It is important to discuss now the implications of the fact that such theories, whatever their specific content, seem to include the same theoretical elements, namely, motives of the role incumbent, his overt behavior, and the effects of such behavior. The simple causal sequence of these elements is that motives result in behavior which, in turn, produces certain effects.

The full set of prescriptions for any role usually will be found to include motives, behavior, and effects, all three. For example, consider the instance of the wife's role in which she is supposed to feel love for her husband, is supposed to keep the house clean, and probably also and more subtly, is supposed to make him feel competently masculine. With regard to the parent-child relation the role prescriptions for parents generally include all three causal units: parents should love their children, should feed their children, and should make their children honest.

It is striking that role prescriptions make this attack on all three fronts simultaneously rather than simply specifying one of them. The implication

is that the underlying theory has weak predictive power, so that it is not sufficient simply to prescribe appropriate parental motives, for instance, and expect the desired behavior and/or effect to occur; or to prescribe overt behavior, and assume the right effects will follow. Nor, evidently, is it sufficient simply to prescribe in terms of effects and turn the parent loose, without also stating the motives he must have and behavior he must perform to produce these effects. Instead, a global approach is employed in which society protects itself by leaving no element of the causal sequence in doubt. This is shown also in the fact that, in role training generally, the trainee is taught not only the appropriate overt behavior for the role, but is at the same time invested with role-appropriate motives.

The same tri-fold prescription is found in the materials of special interest groups and in the formal legal control system of the society. For the former, for example, a central issue among parent educators is the extent to which overt parental behavior may be suggested in contrast to suggesting appropriate motives, e.g., if you love your child, then your child-training practices will generally be all right. For the latter, the legal structure of the society includes laws prohibiting certain kinds of behavior, e.g., indecent exposure; certain kinds of effects, e.g., killing a person; and, certain kinds of motives, e.g., as in instances of fraud in which the intent to deceive may be the crucial issue.

It is disappointing to find that the research data on parent and child roles does little to clarify this issue. In attempts to classify and describe actual role performance, whether for the purposes of predicting from this (as in effects on the child's personality) or simply to give descriptive information, all three causal units have been employed as a basis of classification without distinction between them, and within the same classificatory system. As Baldwin (5, pp. 267-268) has recently pointed out in his discussion of classifying parental behavior, most efforts are "thoroughly muddled in this respect." Thus, for example, in the Fels Parent Behavior Scales (6, 15, 16, 58) the three types of items are indiscriminately included: solicitousness for child's welfare—anxious-nonchalant (motivational unit); duration of contact with parent—extensive-brief (overt behavioral unit); and, readiness of explanation—thwarts curiosity—satisfies curiosity (effect unit). This same mixed basis of classification is found in other studies of role performance (74), as well as of role prescriptions (56, 57). In fact, the studies which consistently adhere to only one of these causal units in classification, such as the use by Sigel *et al.* (65) of overt behavior alone are notable by being exceptions.

It may be unnecessary to point out that analyses of parent and child roles which have no clear and consistent basis of classification are difficult to compare with each other, and hence to generalize from; and that, moreover, predictive studies of the effects of different types of roles, such as on personality development, might increase their predictive power through clarifying the type of predictive unit involved.

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### DESCRIPTIVE PROPERTIES OF ROLES USED IN ANALYSIS

Any role analysis requires the use of one or more descriptive properties of the role, such as the amount of aggression shown, the speed of performance, the degree of authority involved, and so on. This is necessary whether one is concerned with prescriptive or performance aspects of roles, and whether the analysis involves motivational, overt behavioral, or effectual units of analysis. Thus, one concerned with motivational aspects may study whether a parent feels (or should feel) acceptance or rejection toward his child (51); or he may be concerned with whether a specific effect is produced (or should be produced) in a child, such as feelings of being intrinsically or extrinsically valued (3); or one may study whether certain overt behavior is (or should be) performed, such as permissive feeding of infants (12). In any case, it is clear that descriptive properties of the role—acceptance or rejection, feelings of valuation produced, permissive feeding practices—are of necessity always involved.

A great variety of descriptive variables have been employed in analysis of parental roles. Most have been formulated in terms of specific theories relating the role property to specifically predicted outcomes (e.g., 60); other properties have been studied because the investigator is interested in exploring their correlates (e.g., 74); still others have been used primarily as a basis for descriptive comparisons of roles among different social groups (e.g., 21).

In some research on parent and child roles the descriptive properties have been carefully measured and scaled and have the properties of dimensions of role behavior (e.g., 33); in other studies the properties involved tend to be single and discrete units of description (e.g., 56, 57); in still others the properties have not received formal measurement (e.g., 1).

A sample of the major properties of parental roles which have been studied is summarized below. It must be noted that similarities or differences in names of the properties studied does not necessarily indicate empirical similarities or differences; often the operational definitions differ even though the name of the property is the same. Among the role properties studied are: traditional-developmental (9, 17, 21, 22); acceptance-rejection (6, 31, 51, 74); dominance-submission (31, 74); democratic-authoritarian (4, 33); autocratic-democratic (36); independence (6); discipline and authority (53); authoritarian practices, and general good judgment (27, 63). Others are warm-cold, possessive-detached (4); nurturance and frustration (60); dictatorial-cooperative, appeasing-temporizing (32); demanding-antagonistic, superficial-encouraging, protective-indulgent (43); and, dominant, possessive, ignoring (64).

When such a variety of variables have been used in areas of study, as in personality research, attempts to order and simplify are often made through factor analysis. However, no major factor analysis of results of several or many of the different scales used in these studies has been made.

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There have been two factor analyses of the Fels Parent Behavior Scales. Roff's analysis (58) shows four major factors and three minor ones. The major factors are democratic-authoritarian; rigidness-harshness of punishment; harmony-friction; and overprotective-rejection. Lorr and Jenkins (38), in a second order factoring of Roff's seven factors, find three factors of encouragement or denial of dependency needs; democratic or authoritarian values; and strictness or laxity in the home. A third factor analysis is that of Sewell, Mussen and Harris (62). This study factored correlations between scores on 38 items which pertained to child-rearing practices recommended on the basis of psychoanalytic theory. Among the seven resulting factors were permissiveness in early feeding, permissiveness in toilet training, and non-punitive treatment.

At present, it appears that we have isolated few, if any, properties of the parental role which have gained wide acceptance as to theoretical importance. As the search for important properties continues in studies of parent and child roles, it may be valuable to draw upon more general attempts to classify relations in social systems, such as those developed in sociology during the past 50 years. The recent study of Parsons and Bales (49), in which general theoretical properties of roles in social systems are used to describe roles in the parent-child system specifically, is a notable effort in this direction. Drawing on Bales' analysis of roles in small problem-solving groups and Parsons' general analysis of roles in terms of pattern variables, the roles of mother and father, for example, are delineated in terms of their instrumental (task-oriented) or expressive (social-emotional oriented) properties. It is of interest that, in spite of the continuing interest of sociologists in interaction classification, this is apparently the first major effort to utilize the field of parent-child relations as the empirical content area of interaction. Bringing the analysis of parent and child roles into a theoretical relation with analysis of roles in other social systems, through the use of similar descriptive properties of roles, would have the merit not only of providing new research leads for the parent-child relation, but also of integrating research on the parent-child system with other research in behavior science.

#### SPECIFICITY OF THE ROLE

Many of the studies of the parent-child system have analyzed roles of parents, or of children, without any further specification of the role on the basis of sex differences. It certainly is true that there are properties of roles which are shared by both parents, e.g., responsibility for the physical safety of the child, and hence one can speak of the parental role generally. In like manner there are general properties of the child's role, e.g., obedience to the parents. At the same time, it is equally clear that there are specific roles associated with sex differences for both parents and children;

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that is, in addition to the general parent and child roles, there are also roles in the system for father and mother, son and daughter. These four roles are fundamental in the monogamous nuclear family characterizing our society (48), even though in other types of families, e.g., polygamous, additional role specifications might be required (37).

Those studies which have in fact studied specific sex roles in the family have rarely taken the next step, namely, specifying the role in terms of same-sex or cross-sex relations. While it is true that there are characteristics of the father role which pertain to the father's relation to both son and daughter, so that one may sensibly speak of the role of the father generally, it is also true that the father's role with respect to his son will differ in several ways from his role with his daughter. The relative absence of solid research on these role differences is all the more surprising in view of the Freudian hypotheses regarding same-sex and cross-sex interaction in the family.

It seems to us profitable to conceive of each type of parent-child relation, such as father-daughter, mother-son, as a separate social system, with the role behavior of members in each system being somewhat different both in prescription and in performance. Each such system is then conceived to be embedded in a more general system, e.g., father and children, which in turn is embedded in the still more general system of parent and child. This is to say that the father's role in the father-daughter system will contain some elements performed only in that system, some performed also in the father-son system, and also some which are performed equally well by the mother in her relation with the children. Indeed, valuable research could be done on the types of role elements which are general or specific. It appears to us that specifying in research the particular social system and, hence, the particular role, would go far toward making the research more comparable and toward increasing the predictive power of generalizations about parent-child roles.

Some of the implications of increased specification of parent and child roles on the basis of sex differences might be illustrated in connection with the Parsons-Bales hypothesis. As mentioned previously, in their recent work (49) the hypothesis was advanced that the father's role in the family was generally that of an adaptive and instrumental person whereas the mother's tended to be integrative and expressive. These two types of roles, one instrumental or task-oriented and the other expressive or concerned with maintaining good interpersonal relations in the system, are found to arise in small problem-solving groups (7). Zelditch (78), in an analysis of 56 societies for which data on the nuclear family were available, found that, on the whole, in 46 out of the 56 societies the mother and father roles were differentiated in this way.

The data on role behavior in American families might be considered briefly in respect to this hypothesis, even though the definitions of instrumental and expressive roles may not be clear enough to enable us to directly



relate the data to the hypothesis. In any case, if the instrumental role includes supervision and control of children, then Hackett's finding (26) that mothers are perceived as being more supervising and controlling would be contrary to the hypothesis.

If the instrumental role means being responsible for punishment of children, then both Radke's (53) and Stott's (70) findings that the mother more frequently punishes than the father are relevant.

Moreover, the review of the Chicago and Harvard studies by Havighurst and Davis (28) showed that in the Chicago study mothers punished their children most and the Boston study shows that even when both parents are present the mother more frequently disciplines the child. Data from a national survey (79) indicate that parents are about equal in respect to giving punishment. In sum, the mother is equally or more frequently the punisher or disciplinarian.

If the instrumental role involves putting pressure on the child to live up to standards, then Roy's data (59) finding mothers more permissive is pertinent. In contrast, the study of Connor *et al.* (17) finds the prescribed role for fathers is more developmental than for mothers, and Blood (9) has shown that developmental practices are correlated with permissiveness; and the study by McClelland *et al.* (40) shows that mothers expect independence on the part of their children earlier than do fathers. Thus, two of the three studies indicate mothers may be somewhat more pressuring or demanding than the fathers.

However, the one study which seems to bear most directly on the hypothesis is that of Tasch (75) in which she obtained conceptions of the paternal role from 85 fathers. The types of activities they actually performed in their role as father range from "participating in routine daily care" (94 per cent) to "maintain family unity" (37 per cent), the latter being a fairly clear statement of the expressive role. In their conceptions of the paternal role, "being a guide and teacher" and "acting as the authority" was mentioned 66 and 54 times, respectively, whereas supplying protection, stability, and emotional security were mentioned 28 times only. These data then seem to be a confirmation of the hypothesis.

When both members of the parent-child relation are specified by sex, however, it suggests that instrumental and expressive aspects of parental roles may depend on the specific system being considered. Aberle and Naegle (1) indicate that fathers are more demanding for their sons than for their daughters. The data of Sears *et al.* (60) suggest a tendency of mothers to be a little more severe with daughters than with sons. Tasch's data (75) show that for 72 per cent and 71 per cent of the boys the fathers tried to "develop motor abilities, interests, skills," and "develop intellect," while the fathers did this for 52 per cent and 66 per cent of the girls. In contrast, "routine daily care and safety" was given by fathers to 52 per cent of the boys, and 71 per cent of the girls. These data suggest a greater pressure by fathers on sons than on daughters. McKeown and Chyatte (43)

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report that girls more often than boys see their father as encouraging. Concerning punishment, the White House survey (79) shows that girls are punished more by their mothers and boys more by both parents. Simpson (66) reports that boys are more often spanked by fathers, girls by mothers. Thus, it may be that interpretation of the data and the general validity of the hypothesis involve a specification of role behavior on a same-sex, cross-sex basis.

There are other bases of specification which are important. One of these is the ordinal position of the child. Even though there are no role prescriptions in our society specifying different parent-child relations on the basis of ordinality (as there are in many societies with primogeniture, for example), it is certain (34) that there are role performance differences on this basis. A second important basis of specification, which has both prescriptive and performance correlates, involves different types of exceptionality of members of the system, e.g., twins, invalid parents, feeble-minded children, deaf mutes, and the like. While a consideration of these lies outside the scope of this paper, we intend to discuss them in a subsequent paper in this series.

## SOURCES OF INFORMATION ABOUT ROLES

The next of our issues in role analysis is the source of information. It is desirable that this always be taken into account in the analysis and in subsequent generalization. As we pointed out in the section on role prescriptions, the prescriptions for both parent or child will differ depending on whether one draws upon formal laws, public opinion samples, special interest groups, parents, children, etc. While too much disagreement concerning appropriate role behavior would result in the breakdown of the system's functioning, nevertheless, conflict and disagreement in parent-child relations is evident in that various members of the system do not have identical expectations about what is correct behavior. Even on the descriptive level, the perception of the actual role performance may differ depending on who is reporting. Thus, Radke (53), among others, demonstrates that children and parents disagree in their description of what parents actually do.

## CHANGES IN ROLE BEHAVIOR

The fact that both role prescriptions and performance in any parent-child system change through time needs no documentation. Analysis of the process through which roles change is a difficult theoretical problem, and is not germane to our discussion here. What is important is that, recognizing that roles do differ at different stages of the social system, research on parent and child roles should make explicit the ages of the participants in the system.



## CLASSIFICATION OF SELECTED STUDIES OF ROLE BEHAVIOR

In Tables 1 and 2 we have classified 40 selected publications from the past two decades which include data on parent or child roles. This is a small number, to be sure; nevertheless, it is a substantial portion of the relevant studies which have had adequate sample size and an orderly presentation of results. One may be surprised, with all of the attention paid to the family and to child development as areas of study, that the research data on parent-child roles is not large. However, as Cottrell (18) has pointed out, sociologists have contributed not nearly as much as might be expected to knowledge of interpersonal relations in the family. And as Radke-Yarrow and Yarrow (54, p. 22) have pointed out in regard to the revised edition of Carmichael's *Manual of Child Development* (14) "out of 1,215 pages of text, less than 25 pages, scattered throughout the book, are given to parent-child relations." Much of the data that is available comes from the numerous studies seeking to relate parental role behavior to personality development of the child. Not all such studies, though, actually provide data on parental behavior, so even these are not always pertinent.

Our basis of classification involves three of the six issues involved in role analysis which were discussed above. Studies are classified according to whether the data concern prescription or performance of roles; the specific type of parent-child relation (e.g., father-children) involved in the study; and the source of information used in the study. Some arbitrary element was involved in placing the studies, but we have tried in all cases to indicate the major emphases in the data presented.

In these tables we have not included as part of the basis of classification the causal units involved in the study, the descriptive properties of the role behavior, or the age of the members to whom the data pertains. With regard to the first, we have already pointed out that almost all studies provide data which are thoroughly mixed in regard to the causal units employed and, thus, they cannot be classified on this basis. We have omitted descriptive properties of roles because the studies are so varied in these properties that classification would involve separate categories for almost each study. Some indication of the descriptive properties involved may be obtained by referring back to the earlier discussion. Finally, we have not included age of participants in the relation because the ages are varied and, as with descriptive properties, would result in an unfruitful expansion of the table. This means that *the studies grouped together in any cell in the table will be a mixed group in terms of the causal units involved, the descriptive properties involved, and the age of the participants in the roles.*

In the tables, the column headings, "Either/Both Child" and "Either/Both Parent," and the same row heading with regard to sources simply indicate that in the data either the sex of the member has not been specified, or the data pertain to or were obtained from members of both sexes. The

TABLE I  
ROLE PRESCRIPTIONS AND PERFORMANCE FOR PARENTS

By	EITHER/BOTH PARENT TOWARD		FATHER TOWARD		MOTHER TOWARD	
	Either/Both Child	Son Daughter	Either/Both Child	Son Daughter	Either/Both Child	Son Daughter
<i>Prescription</i>						
1 Others .....						
2 Either/Both Parent	36					
3 Father .....	8, 59, 71		17, 22		17	
4 Mother .....	27, 35, 59, 64, 68, 71, 72	68	17		17, 21	
5 Either/Both Child	39, 53		24		24	
6 Boy .....	56		26		26	
7 Girl .....	56		17, 26		17, 26	
<i>Performance</i>						
8 Others .....	6, 32, 67					
9 Either/Both Parent	51	44		79		79
10 Father .....	9		25, 53, 75	1, 75		79
11 Mother .....	9			1, 75		1, 75
12 Either/Both Child	39		29, 53		19, 41, 53, 61	60
13 Boy .....	33		26	43	29, 46, 53	26
14 Girl .....	33		26	43	26	26

TABLE 2  
ROLE PRESCRIPTIONS AND PERFORMANCE FOR CHILDREN

By	Prescription	EITHER/BOTH CHILD TOWARD		BOY TOWARD		GIRL TOWARD	
		Either/Both Parent	Father Mother	Either/Both Parent	Father Mother	Either/Both Parent	Father Mother
15	Others						
16	Either/Both Parent	36		44		44	
17	Father	8, 9, 17, 23, 40		1		1	
18	Mother	9, 17, 21, 27, 35, 40, 64, 68, 72	68				
19	Either/Both Child						
20	Boy			52		52	
21	Girl	17					
Performance							
22	Others	14, 67		14, 67		14, 67	
23	Either/Both Parent			42, 79		42, 79	
24	Father						
25	Mother						
26	Either/Both Child						
27	Boy						
28	Girl						

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row heading "Others" under sources refers to information collected by public opinion samples; observations of behavior, scientific or otherwise; analyses of cultural materials such as laws, folk-lore and the like—that is, information obtained from sources other than specified participants in the parent-child relation.

### *Sources*

In Table 1, Row 1 has no published entries, but would include formal laws regulating parental behavior and representations of the informal norms held by society such as proverbs, child-rearing beliefs, and the like. Many advice books for parents would belong here as prescriptive data, notwithstanding Vincent's study (76) which shows that parent education materials have become less prescriptive than they used to be. We have been unable to find any systematic collection of data pertaining to the generally held prescriptions for parental role behavior.

In Rows 2, 3 and 4 we note only that the several studies in Row 4 which use the mother as a source of information are in the main studies relating mothers' attitudes towards child-rearing practices (which include mothers' beliefs on how parents should behave) to the child's personality or to various antecedents of the attitudes. The data in this cell parallel the data on mothers' prescriptions for children in Row 18, Table 2, e.g., studies 27, 35, 64, 68 and 72. These studies make use of the assumption of reciprocity discussed previously, so that mothers' beliefs about correct parental behavior and correct child behavior are treated as equivalent types of data.

In Rows 5, 6 and 7 we see that the information obtained from the child as source is more specific about the roles involved. These sources include the major surveys of adolescent opinion about desirable parental behavior (26, 56), which contain some of the most extensive data available on role behavior in the parent-child relation. The study by Hackett (26) is primarily concerned with the degree of authoritarianism appropriate for parents. The Remmers and Drucker study (56) is based on a series of items related to mental hygiene, and hence the information involves discrete items rather than dimensions. In Row 8, we have included Spock (67) as a representative of parent education books which give data to parents on how other parents behave. Row 9 includes the major national survey in 1936 by the White House Committee. This study has the merit of including data on specific roles. Row 11 includes the performance counterparts of the numerous prescriptive studies in Row 4, and these studies generally have the same scientific purpose. Here, however, the mother is asked to describe her own behavior and so it becomes specific to her role rather than to parents generally as in the other studies. Rows 12 to 14, which are descriptions of parental performance by children include the study by Radke (53) and the wealth of survey information from Landis and Stone

(33) and from Hackett's study (26) on performance which parallels his prescriptive data in Rows 6 and 7 above.

Turning now to Table 2, Row 15 is similar to Row 1. Included here would be legal prescriptions for children's behavior toward parents, and the informal prescriptive regulations, e.g., "honor thy father and thy mother" which obtain in the culture. Row 18 includes the several studies of mothers' prescriptions for children mentioned in connection with Row 4, and Rows 19 to 21 include the little data on how children believe children should behave towards their parents.

Row 22 is the row which would include most of the child development material, e.g., Carmichael (14), but we wish to state again that the inclusion of such data is questionable since the great bulk of it has little to do with role performance in the parent-child relation. Spock is included here as a representative of parent education books because his data, based on many parental reports and observations of children, are for parents and much of the description pertains to the child's behavior towards his parents. The remaining rows, 23 through 28, show only two studies *describing* youngsters behavior: the White House Conference survey (79) and the Macfarlane (42) research.

Finally, one may note that for the total cell entries, mothers outnumber fathers two to one as sources of information which suggests their greater availability as research subjects.

#### *Prescriptive and Performance Aspects*

The data seems about equally balanced on these two aspects of role behavior for parents; there are 39 performance entries, 31 prescriptive. For children, however, there are 10 performance and 24 prescriptive entries, again indicating our lack of information on role performance by children.

#### *Specificity of Role*

Several observations can be made about the distribution of data. The first is that the studies classified here apparently provide almost as much information about fathers' role behavior as about mothers', although this is more true for prescriptive than for performance aspects. The common assumption that we are relatively ignorant about fathers in contrast to mothers may be questioned. Second, all of the studies which collected information on role behavior of children of one sex got information on the other also so that we are equally knowledgeable or ignorant, as the case may be, about son and daughter role behavior.

Third, both tables indicate what we have already mentioned: namely, a lack of specificity in the data. Thus, there are studies on fathers' behavior toward either or both children, or on boys' behavior toward either or both parents, but only five of all the studies classified specify the sex of both parent and child.

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### CONCLUSION

The analysis of the parent-child relation as a social system involves several major areas of theoretical interest. The first of these, the roles of the parent and the child, have been discussed in this paper. We have attempted to formulate a set of issues which are pertinent to the analysis of parent and child roles; we have used these issues to organize our discussion of these particular roles, and have endeavored to relate available research data to these issues as they have been discussed.

A brief appraisal of selected publications of the past two decades on parent and child roles indicates that there has been wide variation in the positions taken in these publications with respect to several of the issues. Thus, studies have been variously concerned with prescriptive or performance aspects of roles, have used often widely differing characteristics of role behavior in the analysis, have varied in the degree of specificity utilized in studying roles, and have further differed in the sources of information drawn upon and in the age of the members in the parent-child system under study. In addition, most of the studies have not been clear or consistent in their consideration and use of motivational, behavioral or effectual aspects of the roles. The result is that many of the findings of studies of parent-child role behavior are not comparable to each other, and it may be also that some of the disagreement in generalizations about such roles arises from this fact.

Increased attention in research planning and in discussion of parent and child roles to analytic issues such as those discussed in this paper should help in subsequent studies to make our knowledge cumulative and more precise.

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## TIME AS A VARIABLE IN TRANSPOSITION BY CHILDREN

HAROLD W. STEVENSON *and* TED LANGFORD  
*The University of Texas*

An impetus for recent experimental work on the problem of transposition with young children has come from the article published by Kuenne (4) in which she investigated the transposition behavior of "preverbal" and "verbal" children. Subsequent studies have in one instance (1) corroborated Kuenne's findings that "preverbal" children show a decrease in transposition as the test stimuli become more remote from the training stimuli, and that "verbal" children transpose equally well on tests with stimuli adjacent to and remote from the training set. In another study with "preverbal" feeble-minded Ss (9) a decrease in transposition for increasingly remote stimuli was not found.

In an attempt to account for the discrepancy between the latter experiment and the two earlier ones, a difference in testing procedures was noted. In both of the earlier studies testing was begun after a 24-hour delay, while in the third study the test trials followed the training trials immediately. It seems reasonable to assume that the incidence of transposition might vary, depending upon whether the testing is immediate or delayed.

The hypothesis may be advanced that delayed testing will result in a greater frequency of transposition than will immediate testing. The hypothesis is based on the assumption that a delay will increase the difficulty of discriminating between the training and test sets of stimuli, with the consequence that the probability that *S* will show transfer on the test trials will be increased. The present experiment was designed to test the validity of this hypothesis.

### METHOD

#### *Subjects*

The Ss were 80 children of CA 3-0 to 3-11 enrolled in nursery schools in Austin, Texas.<sup>1</sup> This age range was chosen so as to obtain a sample of children that would be on the same CA level as the "preverbal" Ss used

<sup>1</sup> The children were obtained through the cooperation of the staffs of the All Saints, Austin High School, The University of Texas, A B C, Jack and Jill, and Jeffrey Nursery Schools, and the Austin Kindergarten.

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by Kuenne and Alberts and Ehrenfreund. All of the children of the appropriate CA in the nursery schools were tested. None of the children had previously performed in psychological experiments.

### *Materials*

The equipment consisted of (a) a series of six white wooden blocks, (b) a black tray for presenting the blocks, (c) an opaque black screen which prevented *S* from observing *E* arrange the blocks, (d) animal and flower stickers which served as incentives, and (e) sheets of newsprint on which the children pasted their stickers. The blocks were  $\frac{3}{4}$  in. thick and the areas ranged from 32 to 1 sq. in. The size ratio of each block to the succeeding one was 2 to 1. The screen was attached to the tray so that it could be rotated to hide or reveal the blocks.

### *Procedure*

The *S* was seated in front of the apparatus and was told that a game would be played in which he could find stickers. Several stickers were offered to *S* and after *S* had pasted them on the newsprint, the screen was rotated, revealing the two training blocks on the tray. The *S* was then told: "This is a game we play with blocks. See these two blocks. I'm going to hide a sticker under one of them and I want to see if you can find it." The blocks were then arranged behind the screen for the first trial. The *S* was asked to choose the block under which he thought the sticker had been hidden.

All *Ss* were trained with the two largest blocks. The sticker was hidden under the smaller of the two blocks. The positions of the blocks on the board followed a prearranged random sequence of 20 left-right positions. In line with the procedure used in previous studies, 20 training trials were given each day until the criterion of nine correct responses out of 10 consecutive trials was met.

The *Ss* were divided randomly into two experimental groups of 40 *Ss* each. One group of *Ss* was tested immediately after training (Group I) and the other group after a 24-hour delay (Group D). No comment about the change in blocks was made to the *Ss* in either group. After reaching criterion, the *Ss* in Group D were told that the game would be played again the next day. The instructions were repeated when the children returned.

Four subgroups were formed within each experimental group. Each subgroup was tested with a different set of blocks. In both Groups I and D, 10 *Ss* were tested with the blocks one step removed from the training blocks and 10 each with the blocks two, three and four steps removed. In the test trials for the first 10 *Ss*, blocks 2 and 3 were used, for the second 10 *Ss*, blocks 3 and 4 were used, etc. The smaller of the two test blocks in each set concealed the sticker. The test trials were continued until *S* made four consecutive correct responses. After this, *S* was asked to verbalize the solution of the problem.

## RESULTS AND DISCUSSION

*Training*

The two experimental groups did not differ significantly with regard to CA, sex, or ability to learn the discrimination. The mean CA in Group I was 41.6 months ( $SD = 3.6$ ) and in Group D, 42.0 months ( $SD = 3.7$ ). There were 23 and 24 boys in the two groups of 40 Ss, respectively. The mean number of trials (excluding the criterion trials) required to learn the discrimination was 14.2 ( $SD = 17.3$ ) in Group I and 13.0 ( $SD = 25.5$ ) in Group D.

The low number of trials required to learn the discrimination merits special attention. There is a striking difference in the speed with which these Ss learned the discrimination, compared to the speed with which the three-year-old Ss in the previous experiments learned similar size discriminations. The over-all mean of 13.6 trials is quite different from the mean of 335.7 trials found by Kuenne (4) and that of 54.8 trials found by Alberts and Ehrenfreund (1) for their three-year-old Ss. None of the Ss of this age in either of the earlier experiments met the training criterion with no errors. Eight Ss in the present experiment made no errors and 12 Ss made only the one error permitted during the first 10 trials by the training criterion.

The results indicate that the speed of learning may be influenced by several factors which differed among the experiments. The ways in which the stimuli were presented differed. In Kuenne's experiment stimulus-squares were mounted on the doors of boxes containing the incentives, and in Alberts and Ehrenfreund's experiment the incentive boxes were fitted with square doors of different sizes. In this experiment the blocks themselves served as the stimuli. The use of blocks may have aided in divorcing the stimuli from a common background and in increasing the degree to which Ss manipulated the stimuli. This would tend to increase the distinctive characteristics of each stimulus for Ss and to emphasize their relevance for the solution of the problem. A further difference lies in the fact that the incorrect box was locked in Kuenne's experiment, while in both of the later studies Ss were able to see that there was no reward following a choice of an incorrect stimulus. It has been found in animal studies that a discrimination is acquired more readily when an incorrect choice is not blocked (5). The rewards used in the three studies also differed. Kuenne allowed the children to play with toys that they found, Alberts and Ehrenfreund used candy as rewards and in the present study stickers were used. A recent study indicates that the nature of the reward may produce significant differences in the ease with which children learn a discrimination (11). The effects on speed of learning of varying the mode of presenting the stimuli and using different types of rewards need to be studied further, but it is clear from the present results

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that three-year-old Ss may learn a size discrimination much more rapidly than the early studies indicate.

## Transposition

The most commonly accepted measure of transposition is the proportion of Ss who make the response reinforced in training on the first test trial. The data for the first test response are presented in Figure 1. A decrease in frequency of transposition with increasing separation of training and test stimuli was found in both groups. As predicted, the incidence of transposition was consistently less in Group I. The difference in performance between Groups I and D on the first test trial is significant at between the .01 and .02 levels (one-tailed test). The chi square value is 4.27 ( $df = 1$ ).

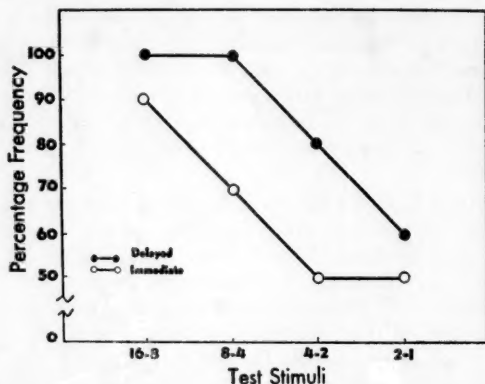


FIGURE 1—The proportion of children giving the "smaller" choices on the first trial, according to test stimuli and time of testing.

A high degree of transfer may be seen in the remarkable rapidity with which the discrimination was learned on the test trials. Excluding the four criterion trials, the median number of trials for Group D was 1 and for Group I it was 1.5. Because of this rapid learning, the differences between the groups found on the first test trial were manifest for only a short period.

An inspection of the curves for the first test trial indicates that the time factor seemed to produce the greatest differences when the stimuli were two and three steps removed. The high proportion of Ss who transposed with stimuli one step removed may indicate that even with immediate testing, relatively few children discriminated between the sets of stimuli. The low frequency of transposition found in both groups with the stimuli

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four steps removed may indicate that these test stimuli are so different from the training stimuli that a 24-hour delay is ineffective in reducing the degree to which three-year-old Ss can discriminate between the two pairs. The number of cases in each subgroup is so small that the interaction between time of testing and degree of remoteness of the test stimuli cannot be evaluated statistically.

The results of the inquiry made at the end of the experiment revealed that the Ss were generally unable to verbalize the principle involved in the problem. Only one S in Group D and two Ss in Group I were able to verbalize appropriately about the solution of the problem. The remainder of the Ss either said nothing, pointed to the correct block, stated they "just knew," or made irrelevant comments.

The greater frequency of transposition following a time lapse is in line with the observations of Köhler (3), and with the results of previous studies with both human adults and rats (7, 10, 12). In the studies with adults (7, 10), as well as in other writings regarding transposition (2, 6), the importance of Ss' failure to discriminate between the sets of stimuli has been noted. It is of interest in terms of the discussion presented earlier that in the animal study, time of testing was found to be a significant variable only when an easy problem was used. In a difficult problem, the discrimination of the difference between the sets of stimuli may be so difficult that transposition would be high, regardless of whether a time delay between training and testing is introduced.

There is no provision in the theory of discrimination learning proposed by Spence (8), and espoused by Kuenne (4) and Alberts and Ehrenfreund (1), to account for the present results, and, until more is known about the effects of such variables as time and inter-set stimulus differences on generalization gradients, it is impossible to know whether the theory is capable of providing a satisfactory account for the present results.

SUMMARY

A group of 80 children of CA 3-0 to 3-11 was trained to choose the smaller of two blocks. Half of the Ss were tested immediately and half after a delay of 24 hours. Tests were made with pairs of blocks one to four steps removed from the training pair. The discrimination was learned with great rapidity. Transposition was significantly greater for the group tested after the delay.

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## AGGRESSIVE BEHAVIOR OF YOUNG CHILDREN IN THE ABSENCE OF AN ADULT<sup>1</sup>

ALBERTA ENGVALL SIEGEL  
*The Pennsylvania State University*

As the use of controlled play situations takes an increasingly prominent role among approaches to the study of child behavior and development, we are becoming alert to the influence which various parameters of play situations may have on the behavior of the child in play. For example, we have become aware of the relations which may exist between the child's behavior in play and such methodological features as the time of day at which the play session is conducted, the sex of the experimenter, various features of the physical setting of the play session, the familiarity of the child with the play situation, the role relations existing between the child and the experimenter, etc.

The present report, which concerns session differences in children's behavior in a play situation, throws some light on the influence of the adult experimenter on the incidence of aggression and of anxiety and guilt in the course of the child's play. Thus, it concerns the influence on certain aspects of child behavior exerted by one parameter of a play situation: the presence of an adult experimenter.

To date, the research evidence which has been presented concerning session differences in aggression in play has come from studies of doll play. In doll play, a standard technique in which a permissive adult experimenter provides a single child with a set of family toys and encourages fantasy play with them, a number of investigations have demonstrated that typically the amount and the directness of children's aggression in the fantasy play increases with time. Systematic observations of this phenomenon have been reported by several research workers: Phillips (2) found increases in amount of aggression not only in a comparison of first and third play sessions but also in a comparison of the first with the third 20 minutes in a single hour-long session; Pintler (3) observed three sessions of doll play with each of her subjects and found that the average latency time before the first occurrence of aggression was longest for the first session and shortest for the third; P. S. Sears (5) observed both a greater incidence

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<sup>1</sup> This study was conducted while the writer was a research fellow of The Instructional Film Research Program at The Pennsylvania State University, supported by a grant from the Carnegie Corporation of New York. The writer is most grateful to Dr. Ellen Tessman for her generosity in serving as the observer for this study, and wishes to thank C. R. Carpenter, Winona L. Morgan, Robert G. Bernreuter, and Leslie P. Greenhill for administrative support of its execution.

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of aggression and a shorter latency time for aggression in the second of her two doll play sessions with her subjects; and Wurtz (10) compared two sessions of doll play and found that "the attenuation of aggression decreases from session I to session II so that more of the aggression shown in session II is direct than is that in session I" (p. 4).

For an explanation of this repeated finding, various experimenters have pointed to the nature of the adult-child interaction, and specifically to the permissive and non-judgmental behavior which is standard for the adult experimenter in doll play sessions. P. S. Sears asserts that "A possible interpretation of the increase from the first to second session is that the child undergoes a gradual release of inhibition as he discovers the experimenter is not punitive toward his aggression. That is, he possesses instigation to aggression (aggression potential) that is greater than is indicated by the amount of aggressive behavior he displays. As his fear of retaliation dissipates, he increases the frequency of his aggressive behavior" (5, p. 36). R. R. Sears also explains the increase of aggression with time as a function of the child's relation with the experimenter: "The effects of play are cumulative in various ways, and the nature of the child's performance during any given period is in part a function of what experience he has had before. For example, there is ordinarily a latent period before any aggression occurs. The child appears to need this time to test the experimenter's tolerance of aggression. When he finds no retribution, he exhibits hostility with progressively greater freedom. During a half hour of play, there is a continuous increase in frequency of aggressive acts if these are charted for successive five minute intervals" (6, p. 195).

Two empirical findings in Pintler's research support the interpretation that the increase of aggression with time "might indicate a lessening of inhibition on the part of the child, due to the fact that his earlier aggressive actions had met with no criticism from the experimenter" (3, p. 164). The first is that under the experimental condition of high adult-child interaction (which was deliberately permissive and non-judgmental), the latency of aggressive acts was significantly shorter than that under the condition of low experimenter-child interaction. Second, the amount of thematic aggression was significantly greater under conditions of high experimenter-child interaction.

The present study, when examined in the light of those cited, may extend our understanding of the influence of the adult experimenter on incidence of aggression, for it reports changes over time in the incidence of aggression in children's play in the *absence* of any adult.

## METHOD

In brief, this study concerns the social play of like-sexed pairs of children, who, in the absence of any adult, spent two sessions in a playroom with standard play equipment. Their play sessions, which were separated

by a week, were observed through a one-way vision mirror and were scored for incidence of aggression and of anxiety and guilt. To test for changes with time, the scores of the children for session I are compared with their scores for session II.

### *Subjects*

The subjects in this study were 24 nursery school children, 12 boys and 12 girls. Their ages ranged from 3-9 to 5-1. The children were assigned to like-sexed partners by their nursery school teachers, who were asked to constitute each pair so that the two children would be willing to go with each other and the experimenter to an unfamiliar building for a new experience.

### *Procedures with the Children*

In all but two cases, each pair's two play sessions were separated in time by just seven days. (For one pair, the two sessions were separated by six days, and for one pair the two sessions were separated by eleven days.)

To control time-of-day effects, any pair's two sessions were held at the same time of day.

For any session, the experimenter invited the scheduled pair of children to join her in leaving the nursery school to go to another building to see a movie. A short cartoon film was shown in the playroom immediately upon the children's arrival, the experimenter remaining with the children during its showing. (Two films were used for the two sessions, and their order of presentation was counterbalanced so that any observed differences between sessions I and II could not be attributed to systematic film effects.)

After the film, the experimenter informed the children that she had to leave them to do some work in another room, and that they were to remain together in the playroom during her absence. She indicated that the toys in the room were for their play during that period. She said that she would knock on the door before returning to the playroom to terminate their play. This plan was emphasized to them in order to highlight the children's privacy and freedom from adult intrusion or supervision during the play period.

The experimenter then wheeled the film projector from the playroom, closing the door of the playroom behind her. The children remained alone in the room for a period during which they had at their disposal this standard group of toys: two rubber daggers, two lumps of soft clay, two toy telephones, four soft rubber sponges, a plastic tea set and accompanying miniature flatware, seven small toy vehicles, a doll bed containing a doll and bedding, eight inflated balloons, and a large inflated plastic punching toy which stood child-height. The arrangement of the playroom was the same at the beginning of each session.

Unknown to the children, each play session was observed by the experimenter and an observer through a one-way vision mirror. At the con-

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clusion of 14 minutes of scoring the children's play, the experimenter returned to the door of the playroom, where she knocked and waited for an invitation to enter, as she had said she would, and then terminated the play and prepared the children to return to the nursery school. If the state of the playroom provided any evidence concerning the nature of the play during her absence, the experimenter studiously avoided showing any signs of noticing this. Moreover, she responded noncommittally to any efforts by the children to discuss the nature of their play. Like the experimenter's procedures in taking leave of the children at the start of the play sessions, these techniques in terminating the play sessions were designed to insure the children's sense of privacy and freedom from adult supervision during the sessions.

### *Scoring Procedures*

During the sessions, the play of both members of the pair was scored, by an observer and by the experimenter, for level of aggression and level of anxiety and guilt. The two scorers each entered four ratings at every 20-second interval, paced by an electric interval timer. At each interval, each child received two ratings from each of the independent scorers: one for level of aggression in play and one for level of anxiety and guilt. The ratings made at each 20-second interval were on a four-point continuum, ranging from 0 to 3.

A child's total score for any session was the sum of the 42 separate ratings assigned to him by the observer at each interval during the 14-minute period. Each child had two totals for each session, one for each of the variables scored. The experimenter's scores, based on simultaneous but independent rating, were used for assessing the reliability of the observer's scores.

*Aggression in play.* Each scorer observed the play of each child for "hostile," "destructive," or "aggressive" behavior. Such behavior might be toward the other child, toward a toy, or toward the self. The aggressive behavior might occur in gesture, in facial expression, in words, or in other sounds.

The scorers used ratings of 0, 1, 2, or 3 to denote the intensity of the observed aggression. A rating of 0 was entered for the 20-second interval if no aggression by the child was observed. A rating of 1 was entered if the observed aggression was mild or perhaps playful. A rating of 2 indicated stronger or more forceful aggression in which the child seemed more absorbed. A rating of 3 denoted intense aggression in which the child was highly involved.

In judging intensity, the scorers considered both the quality of the instrumental act and the nature of the goal response: an act might be intensely aggressive because its aim (goal) is highly destructive or hostile, or because its quality of execution (instrumental act) is highly forceful and shows much self-involvement. A scorer's rating of intensity repre-

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sented the *most extreme* behavior of the child during the 20-second interval, not the average.

The inter-observer agreement in scoring was assessed by comparing the totals from the observer's protocols with those from the experimenter's. The agreement is expressed by the Pearson correlation coefficient,  $r = .97$ .

This coefficient shows that the two scorers' data on aggression were in unusually close agreement. Possible explanations for this unusually high reliability are presented in (7). That source also reports certain correlates of the aggression scores.

*Anxiety and guilt during play.* Each scorer observed the play of each child for behavioral signs of anxiety, inhibition, and guilt. The scoring was guided by a list of specific behavioral signs that the child might be controlling, suppressing, repressing, inhibiting, or denying his own aggressive impulses or those of his partner. Included in the list, which was adapted from the work of Ryder (4, pp. 348-349), were these behaviors: escape behavior; tense, stiff, or awkward movements; incompleting or blocked aggressive acts; self-directed hostility; moralistic comments; nervous mannerisms, tics, thumb-sucking; tense facial expression; masklike expression; tense mouth; stuttering or stammering; reparations or restitution; concealment of evidence following aggression; hands over mouth; inactivity; watching the door (for return of experimenter); halting play at sound of footsteps at door.

As was the case with the aggression ratings, a rating of 0, 1, 2, or 3 was entered for each 20-second interval, representing the *most intense* level of anxiety and guilt shown by the child during that period.

The inter-observer reliability of the anxiety and guilt scores, obtained by comparing the totals from the observer's protocols with the totals from the experimenter's, is given by the Pearson correlation,  $r = .77$ . The lower reliability of these scores, compared with the aggression scores, seems to reflect the greater difficulty of the judgment as well as the fact that anxious and guilty behavior was relatively infrequent in this free play situation and, therefore, the scores of the children were homogeneous, a fact which tends to depress a correlation coefficient.

## RESULTS

Session differences in aggression were analyzed by the Wilcoxon matched-pairs signed-ranks test (8, pp. 75-83), a nonparametric test. The scores used in the analysis were each child's aggression totals for session I and session II in the observer's protocols. The scores for session I were found to be significantly larger ( $p < .05$ ), i.e., the statistical test of the data demonstrates that the children showed significantly more aggression in session I than in session II.

A comparable analysis was made of the children's scores for anxiety and guilt in the two sessions. By the Wilcoxon test, the children were

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shown to have scored significantly higher ( $p < .01$ ) in anxiety and guilt in session I than in session II.

The children's scores on aggression and on anxiety and guilt were correlated:  $r = .30$ ,  $p < .05$ . This relation reflects the fact that aggression anxiety was emphasized in the ratings of anxiety and guilt, and many of the instances of anxiety and guilt occurred immediately after the commission of aggressive or hostile acts.

## DISCUSSION

The finding that aggression (and associated anxiety and guilt) decreases from session to session is directly opposite to the repeated finding (reported in the sources cited earlier) that in doll play aggression increases from session to session. The writer's hypothesis is that this "contradiction" may be explained by the presence of a permissive adult in the doll play sessions and the absence of any adult in the social play sessions of this study.

The evidence of this study, when combined with that from the doll play studies, suggests that the presence of a permissive adult in a play session may have a cumulatively facilitating or releasing effect on children's aggression. Through the processes of reinforcement learning and identification, the young child becomes accustomed to looking to adults for cues as to what behavior is appropriate or acceptable, particularly in a situation which is unfamiliar to him. From a permissive adult's behavior, the child may legitimately conclude that aggression is acceptable in a play session, and, therefore, he will give increasing expression to his own aggressive motivation (which is often stimulated by the nature of the situation, e.g., by the presence of provocative toys). In the absence of any adult, however, apparently his own learned standards and controls are relied upon, with the result that after an initial exploratory testing of the limits of the play situation, his play is increasingly reflective of his learned adherence to middle-class and nursery school social standards.

This interpretation, which accounts for the session-to-session increase in aggression typically observed in doll play and for the session-to-session decrease observed in the social play situation of this study, forces a somewhat more positive conception of the result of experimenter permissiveness than might otherwise be held. Lack of fear of punishment is not a sufficient explanation of the typical session-to-session increase in aggression in doll play, for in the social play sessions of this study there was no apparent threat of adult punishment, and aggression decreased from session to session. A more adequate explanation seems to be that in the presence of an adult experimenter the young child abdicates superego and ego control functions to him, whereas in the absence of any adult the child's own internalized standards are invoked. This explanation draws upon the psychoanalytic interpretation of the relation between leader and follower (1, p. 146).

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An incidental observation in the present study supports the general interpretation being advanced here. Inflated balloons were present in the playroom in all sessions, but in no session was a balloon deliberately broken. Moreover, if the memories of the two scorers serve, only very few children even broached the idea of breaking balloons. Stone (9) has developed a play technique in which the adult experimenter offers the child a graded series of opportunities (permissions) to break balloons. Ryder used this technique in her study with 26 children from four to seven years of age. On the average, four balloons were broken by each child, and only eight of the 26 children broke none at all (4, p. 224). The fact that more than two-thirds of the children broke balloons in Ryder's use of Stone's situation, whereas no children broke balloons in the present play situation, highlights the crucial importance of the adult offers of permission.

The present study and the others which have been cited provide only rough evidence for the interpretation concerning adult permissiveness which has been advanced. We are comparing findings from completely independent researches. More important, we are comparing play situations which differ in other ways as well as in the presence or absence of an adult: They differ in the weighting of fantasy in the play, in the nature of the play equipment presented, and in the presence or absence of another child. All of this means that the interpretation offered here is based on only the grossest sort of evidence, and that it may properly be viewed as an hypothesis which should be tested in a direct comparison of two play situations which differ only in the presence or absence of a permissive adult.

#### SUMMARY

The social play of like-sexed pairs of children, in a situation free of adult supervision or intrusion, was observed in two sessions a week apart. The incidence of aggression and of anxiety and guilt in play decreased from session I to session II. This finding is opposed to earlier findings concerning session differences in aggression in doll play. The hypothesis is presented that this disparity may be accounted for by the presence or absence of an adult in the play sessions: In the presence of an adult experimenter, young children may abdicate superego functions to him, whereas in the absence of any adult their own internalized standards increasingly restrict expression of unacceptable drives, with a consequent reduction in anxiety and guilt.

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# THE RELATIONSHIP OF ANXIETY TO POPULARITY AND REJECTION AMONG INSTITUTIONALIZED DELINQUENT BOYS

RICHARD D. TRENT

*Warwick Child Welfare Services Project  
New York State Training School for Boys*

The major purpose of this inquiry was to examine the relationship between anxiety and sociometric status within two groups of institutionalized delinquent boys. Anxiety was operationally defined in terms of boys' performance on a questionnaire (3) relating to manifest anxiety. Sociometric status was defined in two ways: *choice*, an expressed desire on the part of a boy to interact with another boy; and, *rejection*, an expressed desire on the part of a boy to avoid interaction with another boy.

That there is a positive relationship between "adjustment" and sociometric status within child populations has been supported by numerous studies (2, 4, 6, 7, 9). Thorpe's (14) recent investigation of 980 British children, for example, reported that more neurotic children, as measured by a composite index of neuroses, were significantly less popular than the less neurotic children. A study by McCandless (8) and his associates showed that the more anxious youngsters among Iowa elementary school children were also the less popular. Apparently, poor adjustment, high anxiety and neuroticism in a child tends to distort his perceptions of himself and of others (11, 12, 15). Distortions of perception may lead to inappropriate behavior towards others and, hence, to rejection (5).

However, in examining the relationship between adjustment and sociometric status, most investigators (1, 2, 4, 5, 6, 7, 8, 9, 14) studied children who were described as functioning within the range of normal adjustment. An additional question might be asked: In child groups characterized by high anxiety, are the more anxious youngsters also less popular?

## SAMPLE

The sample consisted of 63 boys in two cottages at the New York State Training School for Boys, a residential institution for adjudicated delinquents. Thirty-one boys were from one cottage and 32 from the second cottage. Thirty-three boys were Negro, 16 were white and 21 were of Puerto Rican origin. Thirty-seven boys were Protestant, 26 were Catholic. The average length of stay in the cottages was 18.7 weeks with a range of two weeks to eleven months at the time of the study. The average intelligence of the group, as measured by the Wechsler-Bellevue, was 81 with a

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range from 57 to 104. The average age of boys was 13 years, 9 months, with a range of 12 years, 7 months, to 16 years, 11 months.

All boys were from deprived socioeconomic backgrounds and a minority of their families were receiving some form of public welfare assistance at the time of boys' admission to the training school. Sixteen boys were from homes where both the natural mother and father were present; 47 boys were from homes where either the natural mother or father was absent from the home. The two most common reasons for boys' commitment were truancy from school and stealing.

This group of boys was a group mainly in the sense of being together in the same cottage living situations. In the training school a group differs from the usual educational group in that there is constant change: new members are added, old members are lost because of the weekly intake and release procedures. Within each cottage group, boys had organized themselves into cliques; in one cottage there appeared to be some rivalry among cliques.

### PROCEDURE

Anxiety was measured by the children's form of the manifest anxiety scale (CMAS). This questionnaire was an adaptation of the Taylor scale of manifest anxiety (13) and was developed by Castaneda (3) and his associates at the Iowa Child Welfare Research Station. The questionnaire consisted of two types of items, 41 anxiety items and 11 lying items (L-scale), which were designed to measure the subject's tendency to falsify responses. Subjects responded to each item by checking either *Yes* or *No*.

Because many subjects were unable to read, it was necessary to modify the standard administrative procedure. Rather than having the subjects attempt to read the questions themselves, as is standard practice, all items were read to the group by this investigator. Instructions given to subjects included only the following: "I am going to read 53 statements to you. Listen carefully. Put a circle around the word *Yes* if you think the statement is true about you. Put a circle around the word *No* if you think the statement is not true about you. Any questions?"

To assess the reliability of the CMAS test, odd CMAS item scores were correlated with even items. The reliability coefficient, corrected by the Spearman-Brown formula, was .78 ( $p < .01$ ). We may assume that the performance of subjects on the CMAS was fairly reliable.

In measuring sociometric relationships, it is often assumed that the least popular member of a group, where only choices are measured, is necessarily the most rejected member of the group. The rationale underlying this point of view is that popularity and rejection are at opposite ends of the same continuum. However, among large institutionalized delinquent groups, this writer has frequently observed that the most popular boy of one clique may, at the same time, be actively rejected by members of other cliques within the same large group. Hence, one boy may be one of the most popular as well as one of the most rejected members of the total group.

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For this reason, an attempt was made to study popularity and rejection as separate entities in the hope that a more valid sociometric picture would emerge.

Sociometric choice and rejection data were obtained by direct questioning. All subjects were asked individually: (a) "I want you to give me the names of three boys in your cottage who you feel are your best friends. Give the name of the best friend first, your second best friend second, and the third one last." (b) "I want you to give me the names of three boys in your cottage who you don't like. First name the boy you dislike most, the second most disliked boy next, and the third most disliked boy last. Think carefully before you answer."

Each boy was given both a choice and a rejection score. The choice score was determined by multiplying all first choices received by 3, all second choices received by 2, and all third choices received by one, and summing the products. With this system, the choice scores ranged from 0 to 42.

Rejection scores were determined by a similar system: all first rejections were multiplied by 3, all second rejections were multiplied by 2, all third rejections were multiplied by one; the sum of the several products represented a boy's rejection score. The range of rejection scores was from 0 to 38.

This system for determining choice and rejection status was based upon the assumption that a first choice or first rejection indicated a stronger desire for or avoidance of interaction than a second or third choice.

In addition to anxiety, popularity and rejection, three other variables were studied: length of stay in the cottage to the nearest week; intelligence, as measured by the Wechsler-Bellevue; and the boy's age to the nearest month. These latter data were obtained from the training school's resident psychologist and from official school records.

## RESULTS

Anxiety scores ranged from 5 to 37. The mean anxiety score was 20.71 with a sigma of 7.08. It is interesting to note that the delinquent boys expressed significantly more anxiety than the sixth grade, nondelinquent boys of Castaneda's standardization group, whose mean score was only 16.58 with a sigma of 7.39. That the delinquents' mean scores were significantly higher than the nondelinquents may indicate a comparatively high degree of anxiety among the institutionalized delinquent. The mean lying score for the delinquent boys was 5.56 with a sigma of 2.31. There was significantly more falsification among these boys than among Castaneda's sixth-grade boys whose mean and sigma were only 1.84 and 1.63 respectively.

A matrix of intercorrelations among anxiety and six other variables is shown in Table 1. There was no significant relationship between anxiety and any of the variables studied. Lying scores were significantly related to age and intelligence: the older the boy, the greater the tendency to falsify.

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TABLE I

A MATRIX OF CORRELATIONS BETWEEN ANXIETY AND L-SCALE SCORES, CHOICES, REJECTIONS, LENGTH OF STAY, INTELLIGENCE AND AGE

<i>Variables</i>	1	2	3	4	5	6	7
1. Anxiety .....		.09	-.09	.11	.08	-.13	.10
2. L-Scale .....			.08	-.17	.09	-.31*	.75*
3. Choices .....				.75*	.15	-.11	.15
4. Rejection .....					-.07	-.21	-.04
5. Length of Stay .....						-.18	.20
6. I.Q. ....							-.01
7. Age .....							

\* Correlations of .25 and .33 significant at the .05 and the .01 levels of probability, respectively.

cation; and, the less the intelligence, the greater the tendency to falsification. Sociometric choices were positively related to rejection: The boys who were chosen most frequently were the same boys who were rejected most frequently.

It should be observed in Table I that choices were significantly related to rejection but that neither was significantly related to anxiety. This question arose: What was the relationship between anxiety and choices and the relationship between anxiety and rejection when the influence of the high relationship between choices and rejection was removed? To answer the question posed, two partial correlations were computed in order to: (a) remove the influence of rejection upon the relationship between anxiety and choice, and (b) remove the influence of choice upon the relationship between anxiety and rejection. The correlation between anxiety and choice, with the influence of rejection removed, was  $-.29$  ( $p < .05$ ) which indicates that the more anxious boys were less popular. This finding is in agreement with the previous studies cited (2, 5, 6, 7, 8, 9, 14). The correlation between anxiety and rejection, with the influence of choice removed, was .03 which was not significantly different from zero. The more anxious boys were not rejected more frequently than the less anxious boys.

## DISCUSSION

That the boys who were chosen more frequently were also rejected more frequently may seem at least semantically confusing and contradictory. However, this finding should be interpreted in terms of the nature of the groups studied—rather aggressive, delinquent boys. The criteria for acceptance and rejection in any group should vary according to the nature of the group, its mores and prestige values. As Pope (10) has so aptly pointed out, among some low socioeconomic boys, the most popular boy may be "the belligerent domineering lad" (10, p. 383). Aggressiveness, among the institutionalized delinquent, may then be a characteristic which

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is rewarded by friendship and homage from some boys but produces rejection and resentment from other boys.

The significant negative relationship between sociometric choices and anxiety emerged after the influence of rejection was removed. However, there was no significant relationship between rejection and anxiety when the influence of sociometric choice was partialled out. Apparently, although high anxiety may not be associated with rejection among the institutionalized delinquent, it may hinder the attainment of popularity among such groups. This major finding tends to support the rationale that anxiety, like neuroticism, may tend to distort a child's perception of others and may lead to inappropriate behavior toward others.

That length of stay in the cottage, intelligence, age and the tendency to falsify responses were unrelated to choice and rejection suggests that these characteristics may not be significant prestige factors among the institutionalized delinquent.

The findings of this study should be regarded as tentative due to the limited size of the sample studied, unique characteristics of the institutionalized delinquent, and the validity of the instruments employed. Whether or not the obtained results can be validly generalized to similar or dissimilar adolescent populations is a matter for future research.

#### SUMMARY

The relationships among anxiety and sociometric popularity and rejection were studied for 63 institutionalized delinquent boys administratively organized into two cottage groups. Anxiety was measured by the children's form of the manifest anxiety scale. The performance of subjects on this test was fairly reliable. Sociometric choice and rejection scores were obtained by direct questioning. Popularity and rejection were considered as separate variables.

The results of this inquiry may be summarized as follows:

1. Popularity was positively related to rejection. The boys who were chosen more frequently also tended to be rejected more frequently.
2. When the influence of rejection was removed from the relationship between anxiety and popularity by partial correlation, there was a significant negative relationship between anxiety and popularity. The more anxious boys were less popular.
3. When the influence of popularity was removed from the relationship between anxiety and rejection by partial correlation, there was no significant relationship between anxiety and rejection. The more anxious boys were not rejected more frequently than the less anxious boys.
4. There were no significant relationships between anxiety and length of stay in the group, intelligence or age of the boy.
5. The tendency of boys to falsify responses on the anxiety scale was unrelated to popularity and rejection, but was related, positively, to age and, negatively, to intelligence.

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6. Choices and rejections were not significantly related to length of stay in the group, intelligence or age of the boy.

7. It was suggested that aggressiveness may be a characteristic which is rewarded by friendship from some boys but produces resentment and rejection from others within the same large group.

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